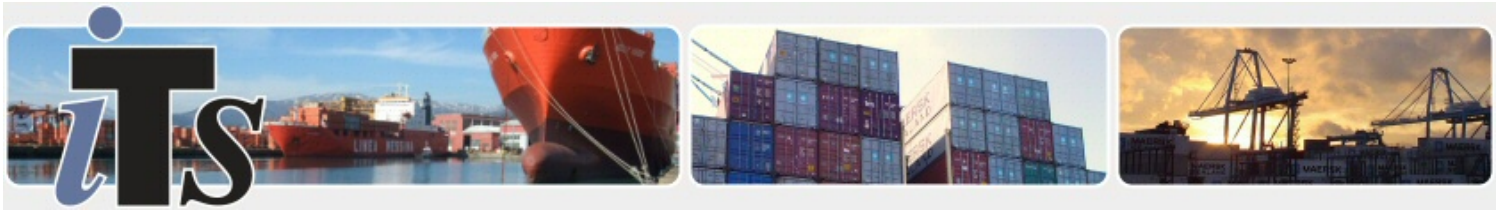


CASE STUDY MESSINA LINE Genoa, Italy

International Terminal Solutions Ltd (ITS) are hardware independent solution integrators with a track record in the implementation of various technologies in the port and terminal environment. ITS started working with Messina Line in 2010 leading to the successful implementation of systems at the Port of Genoa, Italy. An outline and some highlights of this interesting project are shown in this Case Study.

- Mobile Computing
- Radio Data Network
- Equipment Status Visualisation

CASE STUDY – Messina Line, Genoa, Italy

The Objective

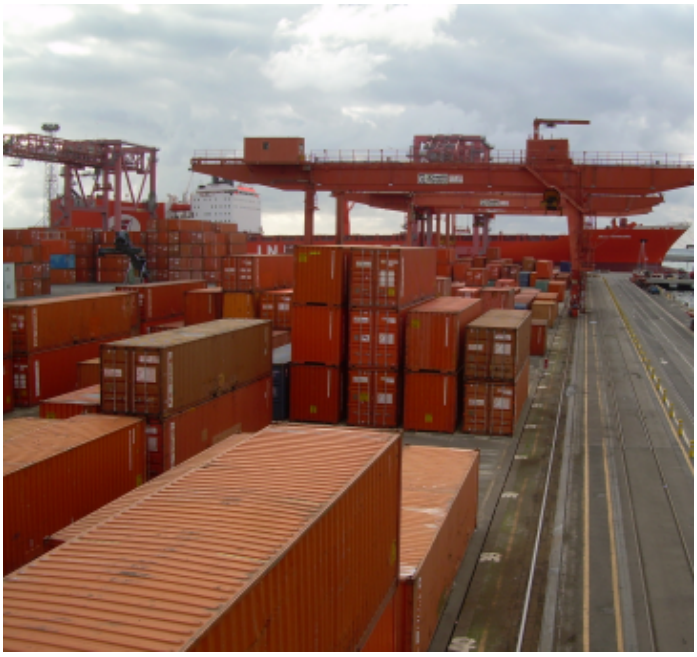
As part of a site wide upgrade project Messina Line had already decided to replace its existing internally developed Terminal Operating System. The system selected offered mobile connectivity using a thin client over a WiFi network. However this became an issue at the Genoa terminal. In common with many others the terminal is leased, and construction of suitable additional structures to mount Access points was not permitted. A number of vendors were approached and a workable, reliable, proven solution could not be found. Messina then contacted ITS and explained the issues and requirements. The key requirements were to connect to the TOS in a reliable and efficient way using up to date methods and provide the mobile operators with an easy to use interface that wasn't purely text based. ITS set about designing a proposal to meet the terminals requirements.

The Solution

ITS systems are designed to operate with a number of connectivity options in addition to utilising WiFi ITS were also able to offer a Narrowband Radio Data system. Traditionally Narrowband has been used as a transmission method to communicate to a mobile using a text based terminal emulation. However ITS suggested that the ITS middleware applications and ITS mobile applications would provide reliable communications allowing the TOS to communicate using XML protocols and the driver to have a user friendly interface. Messina identified that this would provide them with the options they required and the project commenced.

The Terminal

Messina Line operate a fleet of RO-RO container vessels between the main ports in the Mediterranean (Genoa, Marina di Carrara, Naples, Marseilles, Barcelona and Castellon) and the East Mediterranean, North, East, West and South Africa, the Middle East and the Indian Subcontinent. As part of this operational network Messina Line also operate its home terminal in the heart of Genoa, one of the main Italian ports.



The Terminal is located close to the motorways, equipped with a dedicated railway siding and truck gate and is the largest (in terms of containers and general cargo handled) in the old port of Genoa.

The terminal presently extends over a 253,355 sq.m. with 7 STS cranes, 4 RMG cranes, 63 lift trucks (of various types) and 23 trucks (IMVs).

CASE STUDY – Messina Line, Genoa, Italy

Radio Data System

Messina Line Director of operations Captain Adriano Spotti commented “For the integration of these type of systems we selected ITS as they had experience in similar projects providing a high degree of customisation in their systems. This and their ability to provide solutions that would operate on a Narrowband and/or WiFi backbone made them a good partner for a terminal like ours.”

State of The Art Middleware

The interfaces at Messina were implemented to suit the requirements of the existing infrastructure and new terminal operating system using a state of the art XML interface. Messina Lines also implemented the ITS’ E-SMART system utilizing the same middleware and RDS backbone.

Robust Date Transfer

The ITS narrow band Radio Data System (RDS) solutions has been implemented on many terminals throughout the World. Terminals spanning 65,000TEU to over 4M TEU use the ITS system due to the robustness of the data link and good data propagation. The Long range in comparison with WiFI make it ideal in difficult RF environments such as in container stacks. This and the real-time operational reporting and clear easy to use operator instructions made the solution the ideal selection for the Messina Line operation.

Reliable Hardware

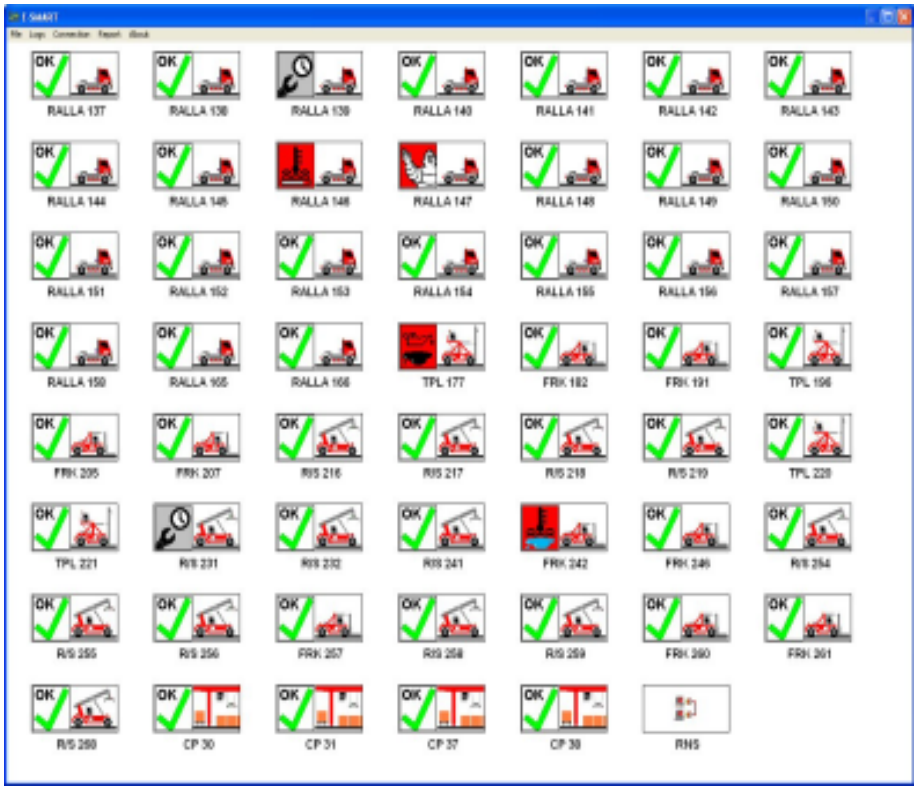
ITS supplied all the mobile computing hardware and software. As one of the G-POS modules the hardware came with touch screen or keyboard options, WiFi, Narrowband, or GPRS options, and is future proof with the ability to add GPS positioning in the future if required.

CASE STUDY – Messina Line, Genoa, Italy

E-SMART

Messina Line have over 90 items of mobile handling equipment. The E-SMART system has allowed them to bring the management and visualisation of all their critical equipment to a single point of focus.

Messina Line selected E-SMART (Equipment – Status Monitoring & Automated Reports Transfer) after viewing an existing E-SMART installation and immediately identified that it would provide a rapid visualisation of the equipment status. In one glance the maintenance engineers and management can easily see the instant equipment requires attention, what the fault is and also the active status of any on-going work. Messina Lines also considered the fact that the Operations Department could instantly see when an item of equipment was available for operations once repaired as a key feature. This feature will help to ensure that during busy times equipment is not waiting following repair and can be taken straight into operation.



KEY FEATURES IMPLEMENTED AT MESSINA LINES

- Maintenance immediately informed of breakdown and location.
- Supervisors / Managers have an instant overview.
- Operations automatically advised when equipment is available.
- System logs and reports for terminal performance analysis.
- Operators quickly report faults using existing RDT.

Management Access

E-SMART provides remote access for Messina Line management and key terminal personnel. From their desktops they can view the Messina terminal equipment status in real-time with live information and also access details on equipment history.

KPI Data

Using the statistical analysis tool Messina Line can interrogate E-SMART for KPI (Key Performance Indicator) data to allow reviews of performance.

CASE STUDY – Messina Line, Genoa, Italy

Container weighing

The Messina Line terminal already had a weigh bridge at the gate for road hauled containers, However transhipment and rail containers do not pass the gate, and gate congestion at busy times was a concern. Working with ITS, Messina decided that in order to avoid congestion and bottlenecks, they had to ensure that the actual weight and any discrepancy, is identified during the normal operational lift by the yard Container Handling Equipment (CHE). This philosophy not only eliminates gate delays and additional moves to weigh the containers, but also ensures further yard shift moves are not required as the container can be planned to the vessel with an accurate weight “right first time”.

The Installation

The equipment mounted mobile computers supplied by ITS are loaded with a version of ITS’ G-POS yard reporting software so the integration of real weight data directly from the container handling equipment was relatively easy to achieve. ITS liaised directly with the local weighing equipment company to implement a simple serial data interface directly between the mobile computer and the weighing equipment mounted on the CHE.

Messina Line Director of operations Capt. Adriano Spotti commented “Data integrity and accuracy is an important part of our terminal operation, we were keen to ensure that when our new TOS software went live the quality of data we used ensured the terminal operated efficiently and the data exchange with the line was correct. In order to do this we realised we needed to integrate various lower level operations such as container weighing.”

At the appropriate stage in the job step the ITS system flags to the driver that the container weight is required and the driver simply presses an OK confirmation button on the touch screen. The weight data is then automatically captured and routed through the ITS middleware over the Narrowband Radio Data System. If the actual weight is outside the weight band the driver is either alerted to a new planned yard slot or told to wait for further instructions. The TOS has been implemented with functionality to allow the terminal to decide what type of containers are to be weighed, such as Import/Export, Container type and type of handling equipment. This gave the terminal flexibility to streamline the weighing to harmonise this with the operation and adjust the criteria as the operation progressed.

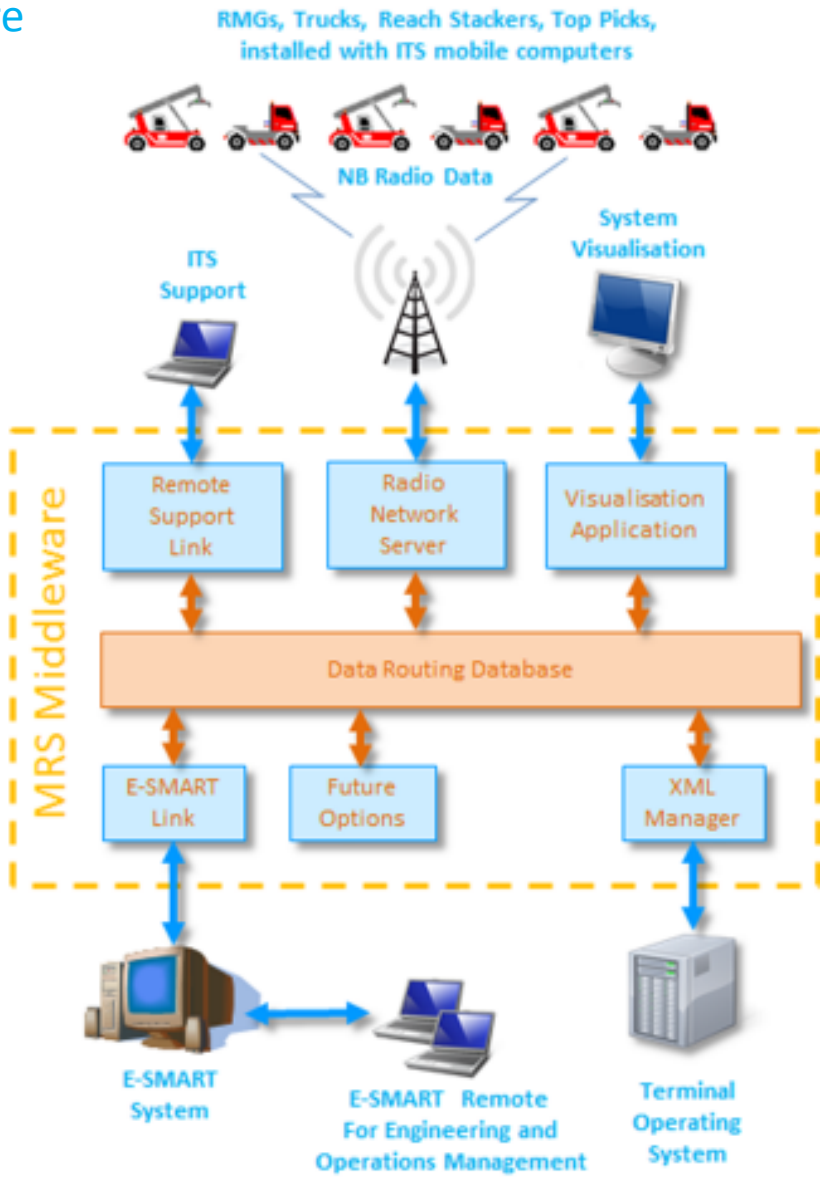
CASE STUDY – Messina Line, Genoa, Italy

Truly Flexible Middleware

The ITS MRS middleware component allows mobile systems and data sources to connect to the management and supervisory systems. The system is flexible and highly configurable.

At Messina Lines the middleware manages the Narrowband Radio Data System and connects the mobiles to the TOS using the latest XML interfaces. The MRS also connects the mobiles to the E-SMART System.

The system is configured for future expansion and also manages the remote connections to the ITS technical support centre.



About ITS

ITS have considerable experience in the field of RFID, GPS, automation and remote data systems for ports, terminals and logistics operations. With its headquarters in the prestigious Loughborough Technology Centre in the UK and access to the research and development facilities of Loughborough University, ITS offers a range of services – from consultancy and product development, through to system support and maintenance.

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