



Fuel transportation is safer with Movicon

Petrostar Srl has realized a fuel loading-unloading control system with Movicon Supervision in Iraq for Bellelli Engineering Spa

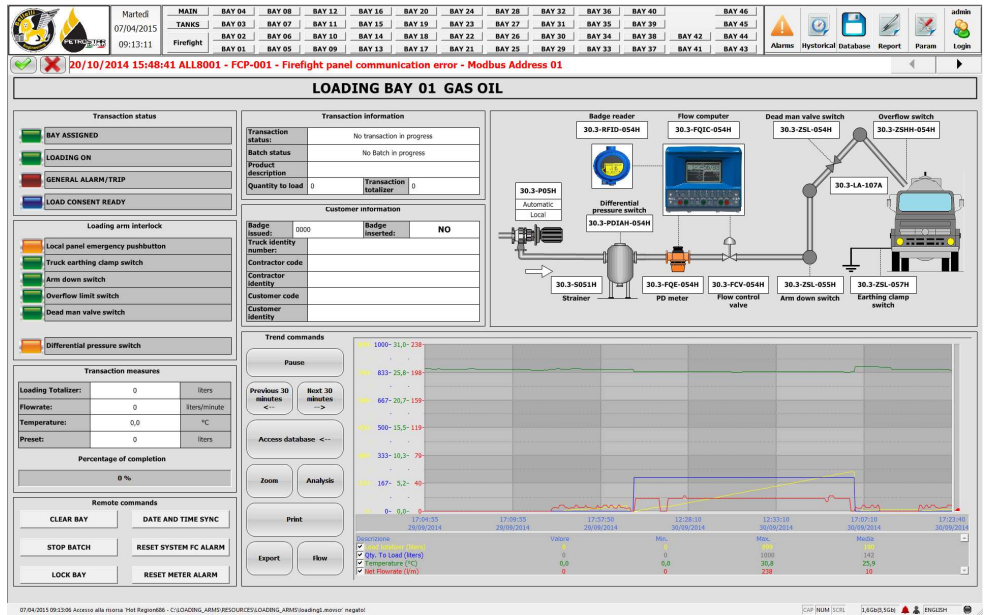
Petrostar Srl is an engineering company of electrical plant, industrial process automation and instrumentation systems in the Oil & Gas, Energy & Power, Petrochemical, Pharmaceutical & Chemical and Food industry sectors.

It is composed of a team of technicians and engineers with vast experience in design engineering, commissioning and starting up these systems in various parts of the world, for world leading contractors and end users in their sectors of competence. Its main activities include:

- Basic and executive engineering of electric and instrumentation systems in the chemical, petrochemical, oil & gas, energy and food production sectors.
- Designing and developing control systems that are based on PLCs with detailed engineering of all the hardware parts concerning panels, connections, and I/O interfaces with the field. Design engineering of all the software parts relating to the PLC (simple and redundant systems) and HMI (Human-machine Interface) whether based on operator panels or SCADA supervisory stations. Study

and engineering of screen and/or tile screen control panels.

- Complete mechanical design engineering of boiler systems, such as heat exchangers, pressure vessels, (lungs, separators, reactors, distillation columns, etc...) and pig traps.
- Analysis and assessment for safety of the plant facilities linked to protection against lightening and gas leaks as well as inflammable dust.
- Design engineering of a safety system against to protect against explosions caused by hazardous elements in the atmosphere in compliancy with the ATEX, IEC and NEC normative.

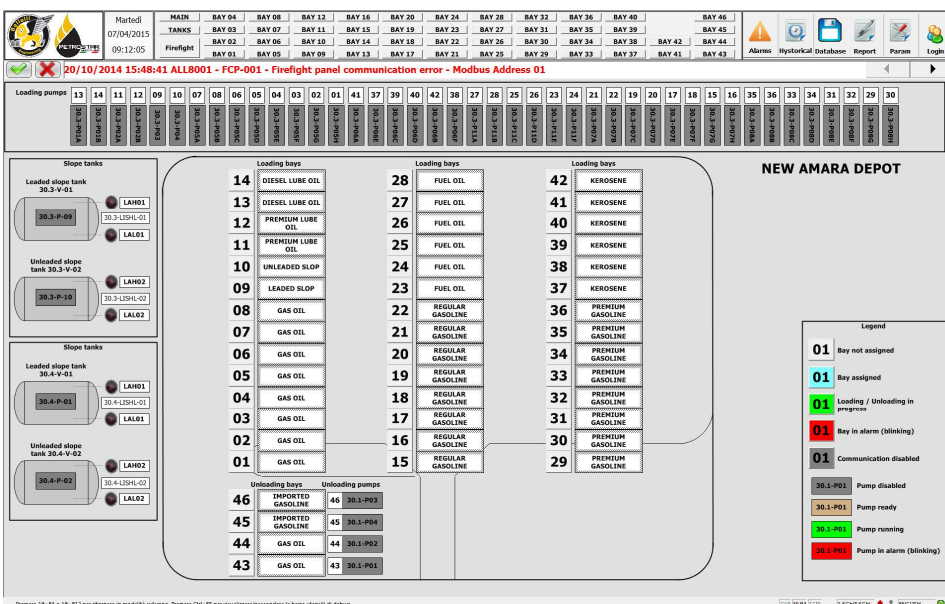


1. A Movicon screen dedicated to fuel loading from a bay.

The client is Bellelli Engineering Spa who mainly design and supply systems and equipment for the petroleum and gas industry, production plants for crude oil treatment and refineries. The end client, the plant system users, is a company affiliated to the Ministry of Oil in Iraq.

Description of Plant system

The system located at the Amara site in Iraq is a fuel depot containing 42 fuel loading bays for oil tanker trucks and 4 unloading bays for imported oil transported to the depot from elsewhere. In addition to the construction, mechanical and electrical parts, each bay has a flow computer complete



2. The plant system's Main screen page showing 42 loading bays and 4 unloading bays

with fuel flow meters and valve control tools. Each fuel loading/unloading operation is enabled and managed from two separate control rooms. Each operator is provided with a unique badge that is assigned to the destination bay to use for starting the loading/unloading operations.

- Recording end tracing of all loading/unloading operations.
- Create various reports on different activities: load-unload tickets, bills of lading, transport bulletin, daily and monthly shift reports.

The control system is based on the redundant Siemens S7-400H PLC that in addition to managing the input and output signals towards the electrical service (MCC) it also manages communications using the Modbus RS485 protocol towards the flow computer of the bays. The supervision system has been design engineered using two control stations installed with Movicon 11.4 using a redundant configuration. The end user had different objectives they wanted to achieve and which included:

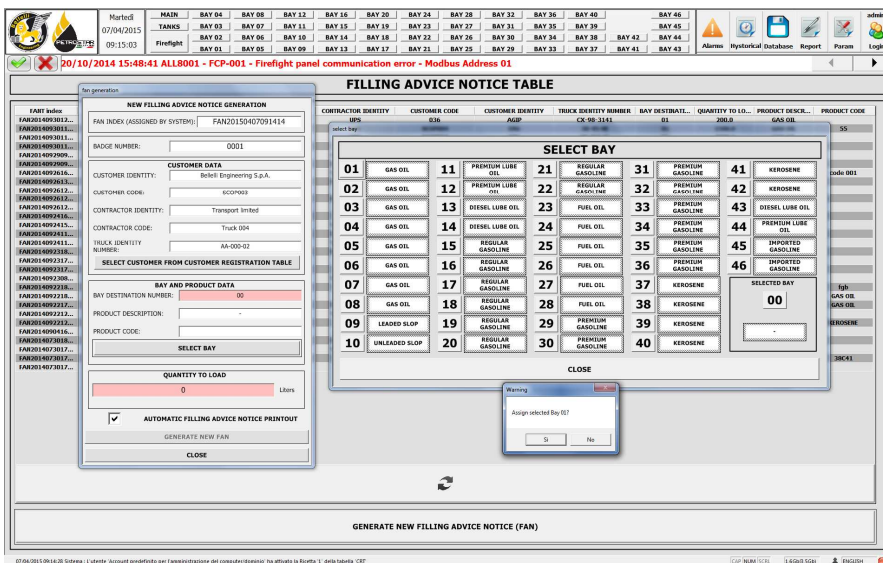
- Fuel Loading/unloading operation safety management
- A unique badge must be used to access bays.

Petrostar managed to create this application using Movicon to enable simplified data aggregation in order to collect information to perform various analysis and reports as requested by the client. Furthermore the integrated redundancy feature can be used for Mission Critical applications. This setup consists of two Movicon servers in hot back up mode with each other to guarantee secure application management in all circumstances.

However the real advantage the client gets from using the Movicon software derives from the reuse of objects created in previous projects. This possibility provides a standard base to work from that is both editable and flexible at the same time to allow the user to save time and resources.

What's more reports are simple to create and exportable to the most popular formats (excel, word, pdf, etc...) using the tools provided.

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3. An example of a Bay assignment for generating new filling advice notices