



## Tank Terminals – Proven Solutions for Airport Fuelling Systems

Industrial Technologies

**SIEMENS**



# Airport fuelling systems:

Safe and future-proof solutions from Siemens



Finding the right combination of automation equipment, safety and communication solutions are vital to keeping costs low. Solutions are also defined in order to keep highest availability in order to keep the system always up and running. No fuel – no fly!

It's also crucial for successfully and reliably operating airport fuelling systems. That's why integrated engineering solutions have become indispensable in this field.

### Integrated know-how for your success

Siemens Industrial Technologies has built up a long-term reputation for developing and implementing the best solutions for airport fuelling systems. This is partly thanks to its broad spectrum of expertise and resources that cover both terminal and into-plane, process design, including development of the basic concept and analysis as well as hardware and software engineering. We also offer integrated solutions for automation, operation and maintenance of your assets. Our solutions always maximize safety and reliability while minimizing costs.

### Reliable lifecycle partnership

We see ourselves as a lifecycle partner for all your needs in any phase of your project – hardware, software, automation and communications. That's why our integrated approach is modular, covering everything from construction and assembly to site commissioning. And with our global Siemens service network we are never far away – your project will always benefit from local Siemens resources for engineering, assembly and commissioning. You are also automatically guaranteed the benefits of after-sales services and assistance for any modifications, adaptations or future extensions. Well-organized Siemens teams deliver full on-site or teleservice support and services, including access to spare parts and 24-hour service for all applications.

### Your link to competitiveness

Based on our concepts for Totally Integrated Power, Totally Integrated Automation, drives and instrumentation, Siemens Industrial Technologies can cover the full range of electrical equipment, retrofitting, extension and servicing. What's more, a partnership with Siemens is your link to the latest innovations in all automation fields as well as reliable power supply solutions – an important step on your path to staying competitive both today and in the future.



# Airport fuelling systems:

## Optimized automation solutions from Siemens

### Optimized safety

The first order of business for operating any airport fuelling system is maximizing the safety of people, equipment and the environment. Siemens Industrial Technologies addresses the latest environmental rules and regulations based on local knowledge and international experience. Our offerings include integrated solutions for control and safety, flexible and modular redundancy concepts, and special safety lifecycle engineering.

### Optimized efficiency

In our airport fuelling systems, sophisticated technology helps cut costs. In fact, thanks to the integration of all relevant processes, our automation solutions minimize the operators' fuel service costs. With the advent of electronic metering and automatic order management, theft of jet fuel is a thing of the past. Our comprehensive scope also offers solutions for safeguarding fuel transports from the refinery or the intermediate storage to your airport. The Integrated Safety Fieldbus also eliminates the need for extra wiring. With Profi safe on Profi bus, both safe and non-safe communication requires only one cable.

### Optimized communications

One of the most important features of the TIA (totally integrated automation) concept is the operators' ability to communicate and use available data freely across all management levels, from the Enterprise Resource Planning (ERP) down to the field level.

### Optimized process automation

The specialized approach of Siemens Industrial Technologies in different fields is based on a process concept developed in-house that includes both products and systems. It's also derived from specific expertise about the hydraulic behavior of liquid fuels in hydrant and pipeline systems.



Storing and delivering jet fuel requires a great deal of attention to safety and reliability in order to guarantee the success of subsequent processes. Achieving this cost-effectively requires optimized automation processes.

### Optimized Quality and Management Systems

Airport fuel storage and hydrant systems are built in compliance with the International standards, API/IP, ASTM, NFPA, Joint Inspection Group Guidelines and local standards. From its earliest days, Siemens has always regarded Quality as one of its prime objectives.

#### ■ Quality Assurance

The Siemens, project division and the associated economic and financial management division have a Quality Assurance (QA) system.

#### ■ PM@Siemens Project Management

An important aspect of project execution is "Project Management" (PM). PM forms an integral part of quality assurance. The PM guidelines deal in essence with the systematic and organizational progress of a project and must make it possible to obtain the technical and economic results agreed.

### Optimized Services:

#### ■ BOOTM

(build, own, operate, transfer and maintain) – Siemens, together with international and local partners, are also able to provide BOOTM contracts, a commonly-used contractual structure that is becoming popular with airports that need new fuel facilities. It allows the airport to outsource the financing, design, construction and operation of the facilities to an independent specialist in aviation fuelling. At the end of the x-year contract, the facilities will be transferred to airport ownership.

■ **EPC** – In a consortium together with local partners; Siemens is able to supply complete EPC contracts.

■ **Upgrade** – Are you thinking of upgrading your existing installation to the newest international standards? Come and talk to us, modernization and upgrade are one of the many areas we specialize in.

## Scope of supply:

### Life Cycle Services

- Financing Solutions
- Project and Site management
- Maintenance and Service

### Safety Integrated Solutions

- Fire & Gas detection, Fire Fighting
- Environmental protection
- Leak Detection/Tightness Control of pipelines
- Optimization of Hydraulic behavior in pipeline systems to prevent pressure surge risks
- Identification Ex-zones, Exd-zones and associated safety procedures
- Cathodic protection
- Earthing

### Terminal Management Solutions

- Vertical Integration of Automation and Resource Planning (ERP)
- Loading/Unloading control; Pipeline receipt
- Into Plane Services to increase service quality by reducing turnaround-times
- Product Quality Management

### Integrated Systems

- Terminal Automation: PLC, SCADA
- Pumps, Motors, Valves and Actuators
- Energy Supply and Distribution
- Loading and unloading solutions for train, truck and ship
- Instrumentation, e.g. Tank gauging, Pressure Control etc.
- Water treatment
- Security & Building Technologies, e.g. CCTV, Access Control, Lighting etc.



# Airport fuelling systems:

References around the world



With Siemens Industrial Technologies, you can rely on an experienced partner who helps you minimize your own project risks and reduce delays and costs – thanks to Siemens' ability to deliver engineering, installation and after-sales service from a single source.

On this page, we can only show a small representation of the numerous Siemens success stories in the field of airport fuelling systems.

## Customer benefits:

- Worldwide presence, local competence
- Reduces project risks by eliminated responsibility for contractual interfaces
- Reduces delays and costs by reduced technical interfaces
- Reduces project organization complexity by having design and installation responsibility within one partner



### Bangalore International Airport, India

Scope of supply: E-EPC for the tank terminal and hydrant system

- Low voltage distribution
- Instrumentation
- Simatic for tank terminal automation
- Leak detection
- Pumping algorithm for optimized hydraulic behavior in hydrant system
- Fire fighting system



### Stuttgart Airport, Germany

Scope of supply: E-EPC for the tank terminal

- Low voltage distribution
- Instrumentation
- Simatic for tank terminal automation
- Management system
- Access control system
- Fire fighting system



### Athens International Airport, Greece

This is a Greenfield project.

Scope of supply: E-EPC contract for the tank terminal and hydrant system

- Energy Supply & Distribution
- Instrumentation
- Simatic for tank terminal automation & hydrant system
- Safety & high availability system
- Integrated Safety system for tank terminals & hydrants
- Leak detection
- Pumping algorithm for optimized hydraulic behavior in hydrant system
- Fire fighting system



### Brussels Airport, Belgium

Siemens is the supplier since 1993. In 2007 complete revamp of automation system for tank terminal and hydrant system

Scope of supply:

- Energy Supply & Distribution
- Instrumentation
- Simatic for tank terminal automation & hydrant system
- Safety & high availability system
- Integrated Safety system for tank terminals & hydrants
- Leak detection
- Pumping algorithm for optimized hydraulic behavior in hydrant system
- Fire fighting system

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