Integrated Terminal Automation Solutions
Honeywell’s solutions are both integrated and scalable. So whether you are building a new facility, expanding or upgrading an existing one, Honeywell can help reduce overall project risk, accelerate production schedules and improve business performance with solutions that drive safety, reliability and efficiency.

**Integrated Solution to Meet**

Honeywell provides an integrated terminal solution that delivers value from conception to implementation and operation for distribution and bulk terminals, such as refinery off-sites, fuel storage and distribution sites, petrochemical storage, loading facilities and marine, rail and truck loading terminals.

**Technology and Project Delivery Capabilities**

- Consistent local support and implementation from 28 global engineering centers
- Best-in-class tank inventory management and custody transfer systems
- Advanced solutions and performance optimization tools and services
- Partnerships with best-in-class product and service suppliers
- Consistent engineering tools and processes for each project phase
- Over 2,700 certified global project managers, engineers and designers
- Over 150 I-MAC projects executed on time and on budget
- Over 8 million hours of engineering and support delivered per year
- 30 years of experience building and supporting a $15 billion installed base

**Benefits of an Integrated Terminal Management System**

- Improve reliability of startup and operations with Honeywell’s I-MAC approach
- Decrease inventory requirements due to improved scheduling and workflow
- Reduce product losses with better reconciliation and accurate metering
- Increase safety of people, processes and equipment with integrated safety and security solutions
- Increase security and improve profitability by validating terminal availability, efficiency and compliance
- Reduce installation cost with Honeywell’s OneWireless™ network and devices, integrating data into existing systems and applications
- Employ scalable, fit-for-purpose solutions delivered in a modular yet integrated architecture
- Reduce and manage environmental risks through early detection and reliable protection and mitigation systems

**Integrated Terminal Solution**

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**Services**

To complement our industry-leading technology, Honeywell offers services to optimize performance and efficiency in all phases of the automation lifecycle. Delivered through local, trained Honeywell professionals, lifecycle services ensure ongoing benefits and help develop an easy upgrade strategy to the latest technology. With more than 2,700 professionals in Honeywell service and support organizations worldwide, we help customers improve business performance and protect their automation investment.
Integrated Access Control
As a leader in industrial security, Honeywell integrates safety and security applications with its terminal solutions. With Honeywell’s access control, only authorized personnel and vehicles gain access to your terminal, buildings and inventory. Integrated access control, digital video surveillance, intrusion detection and cyber security help safeguard the terminal from deliberate attacks, accidents and product pilferage. Radar technology is also available to ensure security even outside the perimeter of the facility.

Product Receiving and Shipment Automation
Honeywell’s terminal solutions ensure safety interlocks against tank overfill. Product shipments are supported for tanker trucks, barges, ship tankers, aircraft refueling, rail cars, drums, barrels, bunkers and pipelines. Each solution has specific control schemes to handle many forms of receipt and shipments. The modular Honeywell truck and rail car skid-mounted solutions can provide faster startup.

Unloading and loading flow rates are regulated and optimized for safety and speed. Accurate and traceable custody transfer is enabled by reconciling stock with the flow metering and tank inventory. Automated pumps and tank valve positions are also continuously monitored and controlled preventing product losses and environmental contamination. In multi-product situations, online densitometers are employed for automatic switching to the appropriate delivery path based on the type of product.

Have Confidence with Honeywell Expertise
Honeywell has the people, experience and expertise to manage your project. Honeywell provides the knowledge to integrate project management, operations automation, information management and maintenance, all in a safe and secure environment. Honeywell’s global expertise and local project implementation services are unmatched in the industry, helping customers to achieve faster startups and improved performance.
Honeywell’s inventory management solutions provide effective tools for stock reconciliation, custody transfer and tank farm operation. The inventory management system calculates product, volume and mass for each tank to actual API standards and provides remote monitoring of raw tank data such as product level, temperature, density and water level. Operators have an easy overview of all tanks, status and product. Several safety interlocks are available.

Honeywell systems provide online stock reconciliation reports based on product received, current stock, delivered quantities to each tank and each movement transaction. Reports can be scheduled or created by event and are approved for accountancy purposes.

Honeywell Enraf's Entis software provides inventory monitoring, custody transfer functions and tank farm operation in an easy to use application. The process data is provided by the most accurate and reliable gauges based on servo and radar technology covering all measurable products from light gases to heavy crude oil products. New developments have made the gauges ready for use in safety applications up to SIL 3, without the need for additional equipment. Other developments involve full deployment of Honeywell’s OneWireless technology allowing installation without the need for costly field wiring in tank farms. Customers have the option to integrate reliable and continuous tank data in their process, resulting in considerable cost savings when replacing tank gauges.
Integrated and Scalable Solutions

Honeywell’s loading automation offerings allow open system architecture enabling seamless integration of the primary system components from Honeywell with secondary components (such as digital control valves, flow meters, grounding/overfill protection and pumps) from our partners and third-party suppliers. Honeywell’s primary system components include the road and rail tanker load computer, gate access controllers, additive injectors and smart blending controllers.

Loading Automation
Honeywell’s loading offerings also include customized loading and off-loading skids for all types of petrochemical bulk terminals, marine, rail and biofuels storage and distribution facilities. These solutions are completely integrated, modular, scalable and suitable for customers building a new site or expanding/upgrading an existing one. These pre-fabricated skids are built using lean Six Sigma manufacturing techniques to ensure world-class quality and are flow tested per operational and functional requirements (simulating worst case operational scenarios) utilizing hi-tech flow test stands. This plug-and-play solution minimizes site installation requirements with negligible site downtime during commissioning.

Honeywell terminal automation solutions offer multiple product blending options for tank, header, inline, load rack, ratio and sequential blending routines. Honeywell’s vast experience in biofuel blending, octane blending and additive injection solutions result in the optimal measurement and reliability.

Integrated Safety
Health, safety and the environment are the top priorities for all terminal facilities. Honeywell’s plant and personnel safety solutions for terminals include a SIL TüV certified system that detects abnormal situations and is designed to immediately bring the facility to a safe state. Human life, the environment and terminal assets are all fully protected.

Protecting people, assets and profitability demands a holistic safety approach—from a secure process control network to the perimeter of the facility. Honeywell has the only automation system that embeds technologies based on research by the Abnormal Situation Management (ASM) Consortium. These applications improve operators’ ability to detect the onset of abnormalities and mitigate disaster for a safe, controlled return to normal operations.

Fire and Gas Detection
Protection of the terminal, personnel and the environment is crucial to achieving maximum uptime and minimizing potential losses. Honeywell’s fire and gas solutions form the basis for early and accurate detection, protection and mitigation of hazards. Accurate, structured and timely detection is essential for early warning, allowing personnel to take the appropriate course of action. It also enables the fire and gas system to automatically perform the required actions to mitigate the potential damages. RMG by Honeywell’s flame arresters serve as secondary protection to hinder transmission of flames and to limit the effect of explosions to a harmless extent. Honeywell can protect your facility and deliver compliant solutions to all domestic and international regulatory standards and best practices inclusive of the Buncefield Recommendations.

Modular Solutions Cover All Aspects of Terminal Management and Automation

1. Marine Security
2. Product Receipt
3. Workflow Management
4. Administration Building
5. Ship Loading and Unloading
6. Tank Farm and Storage
7. Blending and Movement
8. Transfer and Plant Management
9. Loading Bay Automation
Supply Chain Optimization

Honeywell supports oil companies and ERP implementers with model-based software applications that provide real-time optimization of the oil and gas product value chain, from well head to the gas station.

Honeywell’s supply chain optimization applications have been proven to minimize inventory, maximize turnover, reduce product transport costs, reduce capital expenses on new projects, and improve capacity utilization of terminals, shipping and trucking fleets, pipelines and processing plants.

Retail Automation and Fleet Management

Honeywell provides complete automation solutions for petroleum retail outlets and for captive fuelling facilities. For replenishment of retail gas stations, Honeywell offers a fuel delivery management system and a fleet tracking system. For retail gas stations there is a complete hardware and software system to manage all facets from retail sales automation to loyalty programs and head office integration.

A fleet management system will schedule, track and aid in maintaining the truck fleet. At the district level, Honeywell provides solutions to handle district planning, scheduling and management. At the enterprise level, Honeywell provides solutions for network planning, dynamic pricing and demand forecasting and other applications to support the corporate ERP systems in place.

Interface to ERP system

Honeywell’s Experion® Process Knowledge System (PKS) interfaces with the majority of standard ERP systems, including SAP, PeopleSoft, Oracle and JD Edwards, helping increase speed and accuracy of execution, reduce operating demurrage and improve the billing cycle. It encompasses total business processes from order entry to invoicing. Integration with legacy back-office systems and petroleum exchanges are skillfully implemented to maximize efficiency.

Applications

- Petroleum bottom loading and off-load
- Bio-diesel loading and off-loading
- Ethanol loading and off-loading
- Rail loading and off-loading
- Fuel oil loading
- Butane off-loading
- Bitumen loading
- LPG road tanker loading
- LPG transfer skids
- Biofuel metering skids

Improve Performance and Maximize

Honeywell is committed to providing quality and expertise to ensure a successful implementation. Honeywell’s solutions are both integrated and scalable to help reduce overall project risk, accelerate production schedules and improve business performance.
Your Automation Investment

Data Management and Reporting
Honeywell solutions enable receiving, delivery, movement, blending and tank inventory data. Safety and environmental data, security records and system health information is continuously tracked by Honeywell terminal automation products. This information can be integrated and reported for operations purposes, regulatory compliance, accounting, management reporting and invoicing.

Data is available in a comprehensive range of management reports, logs and invoicing in tabular and graphical formats on a daily and monthly basis.

Online, hourly stock reconciliation reports are also generated. Reports can be distributed by e-mail or printed, automatically or by request.

The unmanned control room concept is supported by this system, reducing mistakes caused by human error and increasing the accuracy of the reports. It includes the capability to send exceptions and alarms to mobile staff, and verify receipt as well as automatically alter operations if the situation warrants.

Aircraft Terminal Solutions
Honeywell offers a broad range of solutions for aircraft refueling at all airports from large commercial airports to regional, military and private airports. We provide safety, security, fuel loading and, unloading equipment and automation, measurement, management software and maintenance solutions.

Honeywell provides software for managing the refueling schedule and dispatch, invoicing and inventory management and reconciliation. We provide safety equipment such as electrostatic earthing relays, flow meters and aircraft refueling controllers. We provide airside access control, intrusion detection and video surveillance, fire and gas safety detectors and emergency response systems. For storage tanks we provide level gauging, movement automation and management software. For tanker truck services we also provide complete truck loading, and unloading racks and automation equipment for the loading racks.

Meter Proving
Terminal operators demand that meter calibration errors are kept within measurement authority tolerances and at a level to ensure that product losses at a load rack are minimized.

Honeywell’s Calibron™ small volume prover encompasses technology to provide safe, fast and accurate means to ensure that custody transfer meters operate to maximum measurement and operational efficiency, while reducing load rack unavailability, via simultaneous proving and loading.

Calibron meets the most stringent accuracy requirements for custody transfer meter proving and is the pre-eminent choice for all types of flow meters including PD, coriolis, ultrasonic and turbine. The prover is ideal for both stationary and portable applications. The prover is available as a standalone unit, mounted onto a purpose-built trailer or installed onto a modular metering or loading skid.
Proven Success: Honeywell’s Integrated Terminal Automation

Honeywell provided supply, installation, and commissioning of automated tank truck filling for a terminal in Maharashtra, India. The system was designed to interface with the existing tank farm management, carousel, gas monitoring, weigh bridge and motion weigh bridge systems. Honeywell’s solution included Experion Servers and Stations for the loading rack computer system, Honeywell’s MasterLogic Programmable Logic Controller, a metering system and access control. Honeywell provided services such as detailed design and engineering, documentation, integrated factory acceptance test, site acceptance test, training and preventive maintenance during the warranty period. The benefits include reduction of cycle time for each tank truck loading operation, improvement of loading accuracy and enhanced safety.

Improved Pipeline Automation

In Guangdong, China, Honeywell provided an integrated solution utilizing Honeywell’s Experion SCADA for terminal control and inventory management, truck loading and ship loading, as well as serving as the ERP interface for business data. Honeywell also implemented Safety Manager, an HC900 Hybrid Control system and Experion HS for jetty control. The resulting flexible and open system ensures protection against failure of the mission critical network, handles loading and inventory tasks accurately and safely, ensures efficient and user-friendly operation, and enables future system enhancements and expansions.

For More Information
To learn more about Honeywell’s terminal automation solutions, contact your Honeywell account manager or visit www.honeywell.com/ps.

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