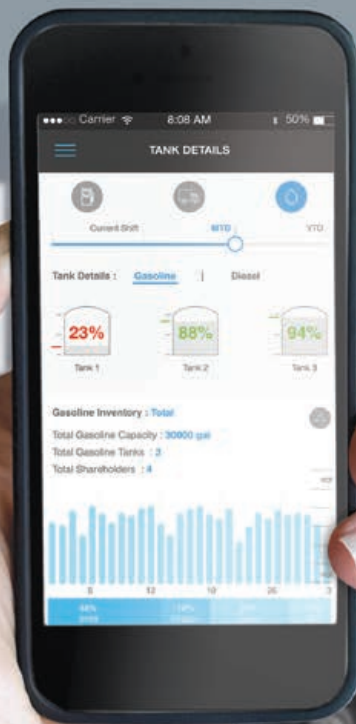# TRANSFORM YOUR TERMINAL PERFORMANCE

Integrated Solutions for Single- and Multi-Site Terminal Operations

Terminals are a critical and strategic part of the value chain in the oil & gas and chemical industries. They are utilized from production to processing and marketing. Within these supply chain areas, there are key logistical systems that help optimize and manage the flow of products to meet customer requirements, and there are automation and business systems that ensure safe and efficient operations. Having all these systems seamlessly integrated provides the greatest opportunity to operate a safe, efficient and profitable terminal.

Running a Terminal is Getting Tougher

At today's complex industrial terminals, operational efficiency and the ability to quickly react to market conditions can significantly impact your bottom line.

The bewildering number of constantly evolving fiscal, environmental, safety and health regulations increases the volatile environment that terminals face today.

Additional challenges for terminal owners/operators include:

- No single integrated view of inventory and operations across multiple terminals
- Difficulty in benchmarking overall asset performance
- Qualified personnel and retiring workforce
- Geographical distribution of terminals
- Increasing need to handle multiple product mixes with complex recipes
- Limited collaboration across the supply chain
- Cyber security.

Achieving increased throughput results, minimizing demurrage costs, and maintaining asset performance add to the day-to-day challenges. The uncertainty associated with forecasting business changes or identifying where the next interruption could occur— whether it's an equipment malfunction, safety incident or out-of-spec product—can affect operating at maximum efficiency.

The Right Approach for Productivity and Profits

Now, more than ever, national oil companies (NOCs), independent bulk storage operators, and other multi-terminal owners need to combine the operations of multiple storage terminals, applying consistent and standardized work practices across facilities to lower IT, OPEX and maintenance costs.

As a terminal operator, you look to integrate disparate inventory management, blending, and loading systems to provide a complete picture of performance. You also need to manage the "paper stream" associated with your operations. It is important to see how each terminal is performing relative to other sites, and determine which terminals have spare capacity, experience bottlenecks, or have room for improvement.

However, running a profitable and compliant operation requires more than just the right technology. You need proven expertise and integrated solutions ensuring equipment, people and processes work together to achieve operational excellence.

Integrate. Connect. Perform.

As a global automation leader with decades of experience in the bulk terminal industry, Honeywell has the answer to solving your most difficult business challenges. We offer unsurpassed capabilities for modern terminal owners and operators who seek better outcomes through integrated automation solutions allowing them to meet both their operational and financial goals.

With the innovative Honeywell Connected Plant approach, you can securely connect field personnel, assets and supply chains; integrate process to process and from site to site across the enterprise; and have them perform at the highest level.

OPERATIONAL EXCELLENCE

1% increase
in throughput

Higher availability and better utilization

COST ADVANTAGE

5% reduction
in lifecycle costs

Platform lifecycle policy

Employ a Comprehensive Solution—Optimize Your Operations

Unlike the traditional practice of purchasing point solutions, which could increase cost and complexity, Honeywell provides a holistic, integrated, cyber-secure solution from the field, to the control room, up to the business level—all delivered by a single trusted supplier.

This approach seamlessly integrates process, assets and people, and helps turn data into actionable insight so you can optimize operations, monitor asset performance, and drastically reduce demurrage cost.

Under the umbrella of the Honeywell Connected Plant solution, we consult, design, manufacture, install and maintain fully integrated solutions, from business management, to operations, safety & security, and predictive maintenance services:

Secure Cloud Technology: With a cloud-hosted solution, customers always stay up-to-date on software releases and can take advantage of the latest features. There is less hardware to manage at each site, as most applications can be deployed in the cloud with runtime data being pushed down to each of the sites to ensure continuity. Furthermore, faster turnaround for troubleshooting and applying fixes can be achieved, and new applications can be easily developed, tested and deployed.

Integrated Cyber Security: It is important to protect operations from a deliberate or unintended cyber attack—either can cause a serious disruption to operations. Honeywell's Industrial Cyber Security Solutions defend the availability, reliability and safety of control systems and operations, stay ahead of threats and resist attacks with intelligent cyber security technology backed by continuous innovation and investment. From advisory consulting to implementation and operational support, our team of experts identifies and addresses your industrial cyber security needs from end-to-end.

Process Control: With the Experion® Process Knowledge System (PKS) as the central automation system with advanced control, alarm management and visualization functionalities, operators can easily control, manage and run terminals reliably and safely. Experion's advanced human interface allows operators to get a full picture of the terminal and avoid any upsets before they occur. Experion interfaces with the majority of standard ERP systems.

Automated Terminal Management: The Terminal Manager software integrates with the Experion control system and other offerings to provide a complete terminal automation solution. It automates and supports logistics operations from inbound to outbound, and supports all modes of material transport. It also controls the flow of information from inventory management systems, and delivers detailed operations insights via an intuitive analytics dashboard.

Versatile Inventory Management: Experion PKS and specific terminal operations software solutions interface with a wide range of servo and radar tank gauges and associated field instruments to provide advanced inventory monitoring and alarming.

Precision Tank Monitoring: With precision tank monitoring solutions, multiple standard tank views are available for each terminal. Personnel are alerted via standard audible and visual alarms based on the inventory position in each tank.

Flexible Loading Automation: A complete line of loading, additive and blending controllers is available to optimize your loading automation requirements. Not only do the controllers manage straight loading, but they also handle ratio and side stream blending.
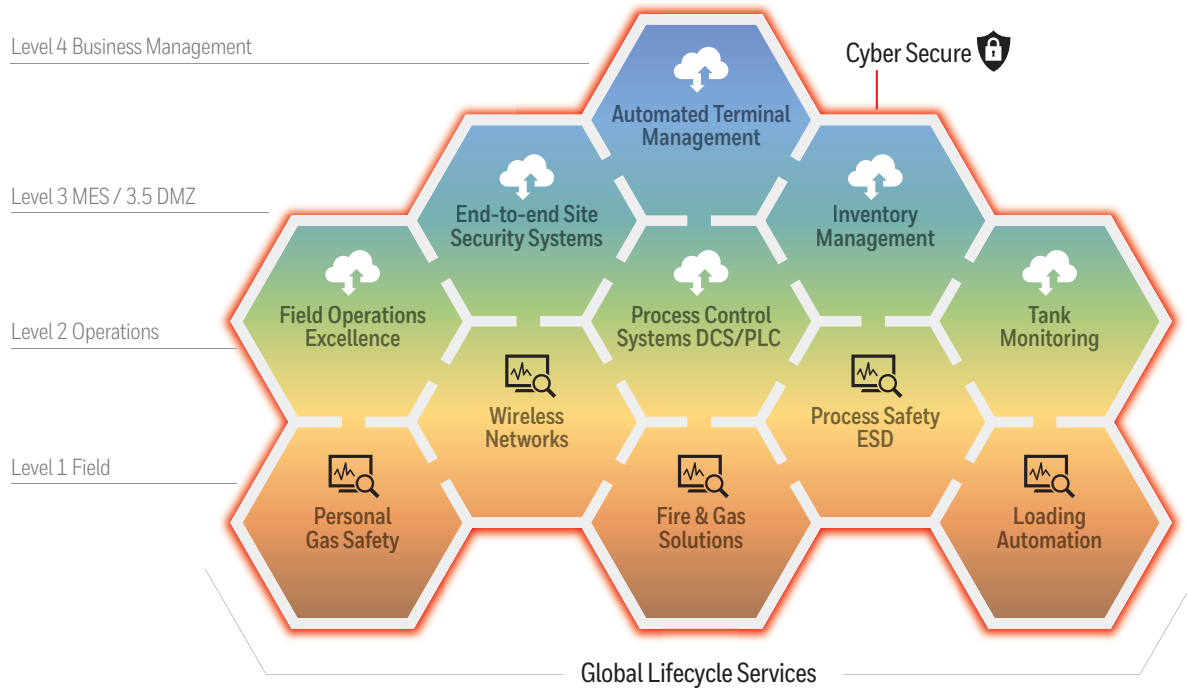
Connect Processes, Assets, Field Personnel, Supply Chains

Level 4 Business Management

Level 3 MES / 3.5 DMZ

Level 2 Operations

Level 1 Field

Automated Terminal Management

Cyber Secure

End-to-end Site Security Systems

Inventory Management

Field Operations Excellence

Process Control Systems DCS/PLC

Tank Monitoring

Wireless Networks

Process Safety ESD

Personal Gas Safety

Fire & Gas Solutions

Loading Automation

Global Lifecycle Services

Cloud Connectivity

Equipment Health Monitoring

State-of-the-art Fire & Gas Solutions: Our fire & gas offering combines state-of-the-art technologies with the world-class Experion process automation system. These solutions are essential in tank and storage areas, where protection is the highest priority.

Proven Personal Gas Safety: Terminals can also combine best-in-class personal gas detection products with Experion. This approach supports multiple communication protocols, including radio, wireless and Bluetooth. It results in improved response time and better situational awareness that helps save lives in an emergency.

End-to-end Security Systems: Honeywell addresses site security, including perimeter intrusion detection, video surveillance, access control and more, all integrated with the Experion Industrial Security platform (EIS). Security systems are provided along with suitable wired or wireless networks, which enable better operator efficiency and improve situational awareness.

Advanced Wireless Network: The OneWireless™ solution enables wireless applications like tank gauging, process measurements, overfill alarming, valve position detection, and floating roof monitoring to be natively integrated into the Experion platform. The platform supports ISA100 Wireless, WirelessHART, Wifi and Ethernet devices on a single redundant network infrastructure.

Integrated Pipeline Solutions: Terminals can benefit from solutions that track batches of product being transported through pipelines or being transferred between tanks, and provide movement monitoring so that product moved from one location can be accounted for at its destination. These solutions also provide a range of leak detection options to monitor product as it flows through pipelines.

Field Operations Excellence: Honeywell offers an end-to-end solution that improves field personnel's competency and their day-to-day productivity and safety. The solution offers simulation-based learning leveraging latest augmented reality technology, and delivers real-time information, data and knowledge to the field staff on demand.

Equipment Health Monitoring & Energy Management: Equipment health monitoring applications allow customers to build an asset-centric model of their terminal that can be monitored for reliability and availability. Standard models for common equipment such as tanks and pipelines are readily available, while various terminal-specific models can be developed upon request.

In order to optimize energy usage across terminals to reduce OPEX and meet stringent regulatory requirements, Energy Management solutions can be integrated.

As a major global automation supplier, Honeywell has a proven track record ensuring safe operations at more than 3,000 terminals worldwide. More than 60 years of domain experience in the midstream oil and gas market speaks for itself, including projects completed in more than 100 countries.

Benefits Across Your Enterprise

Honeywell Connected Plant for Terminals provides significant value at each level of terminal operations and business processes, and covers all aspects of custody transfer, including safety, security, operational excellence and regulatory compliance.

REDUCED ENGINEERING TIME

20% to 30%
reduction in costs & project schedule

Standard builds and collaboration strategies (LEAP,™ VEP)

Corporate Executives: Accurately compare terminal performance across multiple, geographically dispersed locations, and implement company-wide strategies to keep operations safe, quality high, and customers satisfied.

Planners: Precisely determine terminal consumption and inventory distribution patterns, identify and predict product allocation scenarios for different stakeholders, monitor inventory availability at individual or multiple facilities, and plan shipments and orders from a centralized location.

Terminal Managers: Optimize throughput and reduce demurrage/turnaround times to maximize profits. Identify bottlenecks and optimize bay utilization.

Terminal Operators: Monitor and maintain bay efficiency, manage terminal inventory, respond to alarms and alerts, and track and execute loading plans and shipments.

With Honeywell, your terminal can realize major operational and business benefits, including improved safety, better efficiency, greater agility, enhanced productivity and increased profitability.

Benefits of a Cloud-hosted Solution

Be the best in your industry.

Lower Cost of Entry & Predictable Ongoing Cost

- Lower and predictable cost for implementation and maintenance
- Shift project costs from CAPEX to OPEX—Software as a Service

Secure: Cyber & Physical

- Stay ahead of threats and resist attacks with intelligent cyber security technology backed by continuous innovation and investment
- End-to-end physical security solutions connected to the cloud

Reliable

- Consistent practices across all terminals reducing learning curve and improving reliability

Flexible & Scalable

- Highly scalable projects— can easily add terminals or new functionality to all

Rapid Project Cycle

- End-to-end project management methodology meeting complex terminal requirements
- Faster rollout of software upgrades, for use within hours

Access Anywhere

- Cloud systems can be accessed from almost anywhere—PC, tablet, phone
- Faster turnaround for trouble-shooting and applying fixes

Global Lifecycle Support

- Choose from tailored support services to protect your investment and optimize your maintenance cost

Always Up-to-date on Software & Features

- Take advantage of latest software releases and features— provided by Honeywell as part of solution

Lower Burden on Key Technical Resources

- Free-up your critical resources for higher value work by using standard design and implementation methodologies

Hybrid Solutions: On-Site & Cloud

- Combine on-site and cloud solutions to mitigate connectivity failures

For more information

To learn more about Terminal Operation Solutions,
visit www.honeywellprocess.com/terminals
or contact your Honeywell account manager.

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