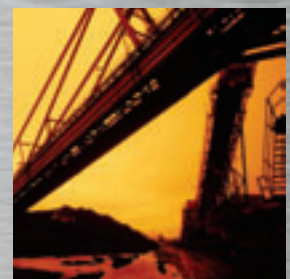




**Integrated Production Solutions for the
Metals, Mining and Minerals Industry**

Superior automation solutions for today's competitive environment.

Profit margins are getting slimmer as global resources are stretched and capacity catches up with demand. In addition, environmental, cost and energy concerns are increasing as the industry consolidates globally. To meet these dynamic conditions and maintain sustainability, Honeywell offers solutions for the metals, mining and minerals industry. From alumina and aluminum to copper and steel, Honeywell has the experience and capabilities to improve performance, throughput and efficiency.





Stay ahead in a rapidly changing industry.



Opportunities abound in today's metals, mining and minerals industry—if you have trusted control systems that ensure you can deliver the highest levels of production and are capable of optimizing your business performance. Honeywell is experienced in the metals, mining and minerals industry, from the crusher to the smelter, the furnace to the mill and digestion to calcination. In the copper mine, steel mill, alumina refinery and aluminium smelter, Honeywell solutions are at work improving production and performance.

Manage Diverse Assets Through Technology Integration

Whether your production assets incorporate systems from Honeywell or other suppliers, Honeywell applications can provide better visibility and optimize your end-to-end supply chain operations and production. Our applications can deliver improved performance through better control and optimization of your production process as well as through improved knowledge sharing that empowers your workforce.

Innovation in Process Automation

Honeywell's Experion® Process Knowledge System (PKS) turns real-time process

data into meaningful information for timely decision making. Unifying people with process, business and asset management, Experion helps metals, mining and mineral operations increase profitability and productivity. Experion is the only automation system that focuses on turning the knowledge within the organization and aligning people with business processes. By integrating data across the operation, optimizing the usage of the fixed assets and assimilating the fragmented business processes into a unified system, operations will become more proactive, efficient and responsive.



Solutions designed for the metals, mining and minerals industry.

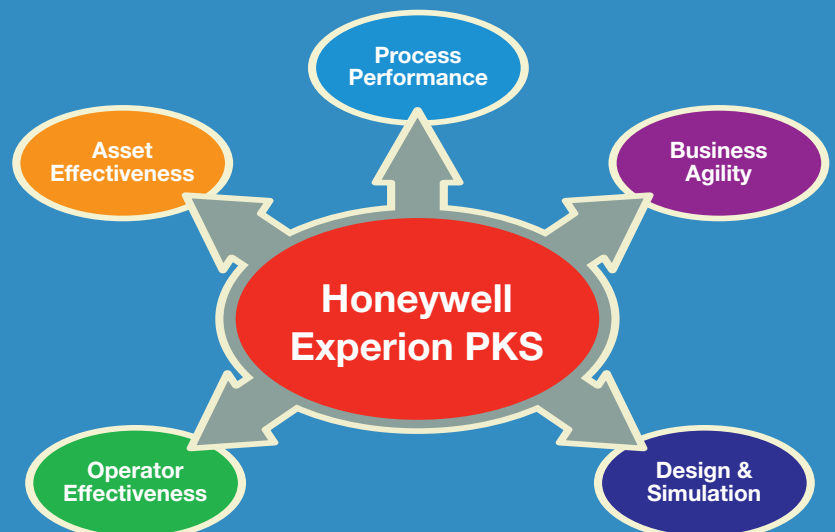


With Honeywell's Domain Expertise, Technology Leadership and Best-in-class Global Services, You Can:

- Improve new project capital investment return and cash flow by choosing Honeywell as a single source supplier of automation systems, production management applications, wireless instruments, safety and security systems, and services for design, installation, commissioning and startup
 - Maximize production and optimize quality through the use of advanced controls designed for various metals, mining and minerals processes
 - Increase the effectiveness of operations personnel through smart alarming design, a Human Machine Interface (HMI) that improves operator response to abnormal situations and automates startup
- operations while minimizing engineering and maintenance
 - Ensure reliability and sustain production while minimizing the cost of ownership through the continuous evolution and migration of the control system to the latest technologies and maintaining the results through continuous loop, alarm scouting and reporting services
 - Integrate production management with plant operating systems and business systems to continuously improve decision making for:
 - Delivering Key Performance Indicators to all stakeholders in real time, aligning corporate-wide goals with individual or team targets, automatically reconciling production and reporting on a daily basis
 - Monitoring of operations including downtime and lost production tracking
 - Allowing field operators to enter and collect data and manage round procedures with wireless handheld devices
 - Improving shift change communication, outage reasons logging and streamline efforts to close out and sign off on shift and daily reports with Electronic Operations Logbook
 - Integrating process and production reporting information and web visualization
 - Ensuring laboratory data is managed and readily available for better operational control with Laboratory Information Management System (LIMS) integration
 - Exchanging data with corporate business systems

Honeywell's advanced solutions deliver value-added functionality at all levels of control and assist operations in optimizing profitability through increasing recoveries, maximizing product grades, minimizing consumables and reducing energy usage.

Honeywell's global operations and delivery practices ensure that your processes are optimized throughout the operations lifecycle. Our goal is to provide solutions that go beyond supplying hardware and software to solve business problems and deliver added value.





The Experion platform provides a robust system with low lifecycle costs that includes:

Experion Controller. The industry's latest and smallest footprint control platform that includes the most comprehensive control algorithms, the best digital field communications capability including HART, FOUNDATION Fieldbus, Profibus, integrated motor control and HMI. The platform offers online logic visualization, enhanced control loop performance using Profit® Loop, easy to maintain sequence controls for automated operations and guidance for complex procedural operations.

Experion HMI. An integrated HMI as well as a platform for integration of third-party controls and PLCs features full functionality and performance from small systems for cement plants to large systems for alumina refineries. The system uses state-of-the-art

web-based technology that enables many integration features and functions in a format that allows it to be migrated and supported for many years.

Facilities and Security Management.

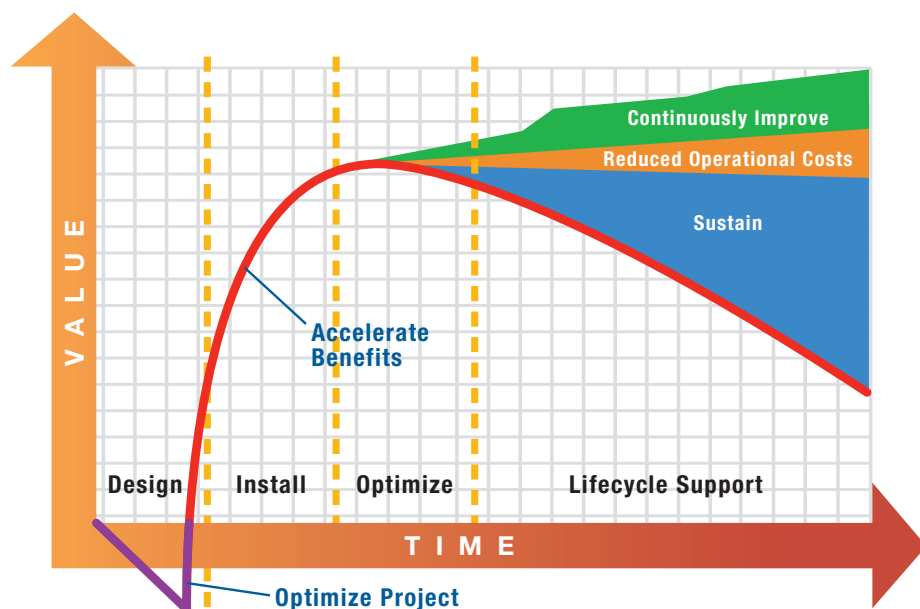
Monitoring your fire and gas processes and being able to access your security and monitoring systems is essential. Honeywell's Enterprise Building Integrator and Digital Video Manager™ work seamlessly with the Experion control system to safeguard your facilities, people and the environment.

Safety Management. Ensuring emergency shutdown of your boiler, burner, calciner, dryer and pressurized vessels is crucial. Safety Manager provides up to SIL 3 protection of your critical equipment. Honeywell's gas detection sensors and corrosion monitoring system ensures that equipment is operating safely.

Advanced Process Control. Profit Suite™ advanced control applications customized for various processing operations are proven to increase throughput, reduce power consumption and increase recoveries. The model-based controller, optimizer, inferential sensor and multivariate early event detection technology have been used in well over 1,000 process operations worldwide returning over \$3 billion in improved profitability.

Information Management. Honeywell's Manufacturing Execution System (MES) integrates information and captures benefits by layering industry-specific processes on standard applications such as Uniformance® PHD, Business FLEX®, LIMS and IntelTrac. MES supports the entire production operation with a single trusted data asset integrating all available data sources and facilitating day-to-day processes.

Simulation and Modeling. UniSim® simulation software covers the entire lifecycle of your operation, providing a realistic model of the processes and control system for project design, operation improvement and process optimization. With UniSim, you can better design the plant, conduct what-if analysis, learn up-to-date process changes, practice proper response during abnormal situations, and learn how to optimally push the entire asset closer to constraint and more efficiently meet business objectives. Your operations can continuously improve, while ensuring safety and enabling a faster startup for a new process unit.



Maximize Returns to Alumina Refineries

Honeywell is the leading supplier of advanced solutions for alumina refineries. Most refineries can immediately increase production, reduce energy usage, and improve yield by applying Honeywell's solutions to key process units such as digestion, mud washing, evaporation, calcinations, SAG mill and grinding circuits, heat exchanging and site-wide liquor control.

Optimize Operations of Aluminium Smelters

Fluctuating market prices, increasing energy costs and product demands require aluminium smelter operations to be more effective and agile. Honeywell's aluminium smelter MES applications can help improve customer order acceptance flexibility, optimize furnaces and ladles production schedule, minimize cast house cycle time and reduce furnace flushing to maximize pot metal superheat and production. Our solutions help minimize metal losses, optimize metal inventory and minimize quality giveaways through frequent and accurate metallurgical balance. Advanced control technology helps to better manage the anode baking furnace temperature profile, early event detection and state estimation technologies enable the smelter to improve pot control and kiln reliability.

Improve Profitability of Steel Mills

Steel producers must excel in a highly dynamic and interactive business environment. Market conditions, new product requirements, material costs and process management must all be accounted for. From field instrumentation to advanced planning and scheduling, MES and ERP integration, Honeywell solutions can be deployed in a modular and scalable fashion with the flexibility to reconfigure existing applications and integrate new applications as needed. Our advanced solutions help iron and steel making plants optimize and improve sintering quality, optimize blast furnace charging, improve coke oven and blast furnace off-gas reuse, automate coke oven level, track ladle movement, predict BOF turndown quality, detect caster mould breakout, improve reheating furnace control, optimize cropping and enable air separation unit load control.

Copper and Base Metals Profitability Improvement

Copper and base producers can capture higher profits and reduce operating costs through focusing on improving recovery, increasing throughput and ensuring high equipment utilization. Honeywell's solutions have the flexibility to cover the diverse demands of copper and base metal production processes, including open pit mining, concentrators, cathode production, filtering and drying. Experion controllers can reduce crusher bin pump maintenance and grinding mill re-lining, as well as improve concentrator recovery and flash furnace performance. Better track precious metal components, increase recovery rates and improve overall plant weigh scale and metering calibration using metallurgical and production balancing.

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For More Information

To learn more about Honeywell's solutions for the metals, mining and minerals industry, call your Honeywell account manager or visit www.honeywell.com/ps.

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Process Solutions

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