

BUILDING TOMORROW'S MINING OPERATIONS



Honeywell

BUILDING TOMORROW'S MINING OPERATIONS

With deep industry insight, decades of experience, and advanced technology, Honeywell empowers mining operators to enhance performance, optimize processes, and drive transformation across the globe.

We partner with mining organizations to make operations more efficient, reliable, safe, and sustainable.

We're an industry leader in mining and mineral technologies, systems and innovation. We bring more than half a century of experience working with over 300 mining sites worldwide and backed by more than \$100M in annual R&D investment.

With proven technologies and powerful innovations, we help new operators and the biggest players, delivering the operational objectives and business outcomes that matter:



Enhancing
operational capability
and investment potential



Enabling
operational control and
evidence-based decision making



Preserving
capital expenditure
and de-risking EPC



Accelerating
production targets and
long-term business outcomes



Optimizing
the production lifecycle and
reducing the costs of ownership

MEETING MINING'S CHALLENGES

Mining operators face a shifting landscape as expectations, the operating environment and technology change:

- They must maintain their license to operate by meeting stakeholder demands and regulatory requirements around their social, environmental and governance practices
- They need to manage resource depletion and quality decline, with diminishing grade deposits and technical challenges reaching deeper ore reserves
- They face a wave of retirement of skilled workers and a need to enhance training, capture and retain knowledge and operate with fewer, less experienced workers.
- They need to digitize, optimize and automate, meeting demands for sustainability, resource optimization and workforce transformation through autonomy and intelligence.

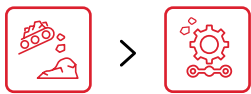
GROWING WITH YOU

As mining operations mature, progress and change through the lifecycle, they need robust IT/OT solutions for efficiency, scalability and interoperability. Honeywell brings industry experience and expertise, market-leading systems and proven integration capability, delivering projects successfully and enhancing operational performance.



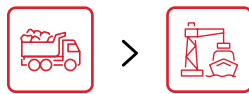
VALUE ACROSS THE LIFECYCLE

Our technology empowers mining operators to identify and achieve operational efficiencies and deliver business results. We provide efficient paths to digital transformations encompassing the entire asset lifecycle and focusing on the drivers of commercial success.



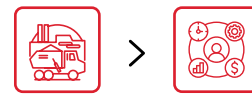
Pit-to-plan performance

We generate operational intelligence for experts managing the mine and plant to de-risk decision making, align interdisciplinary outcomes and improve yield accuracy, consistency and quality.



Pit-to-port optimization

We help managers optimize end-to-end operations and supply chains, enhancing visibility and control over the asset, production and logistics lifecycle.

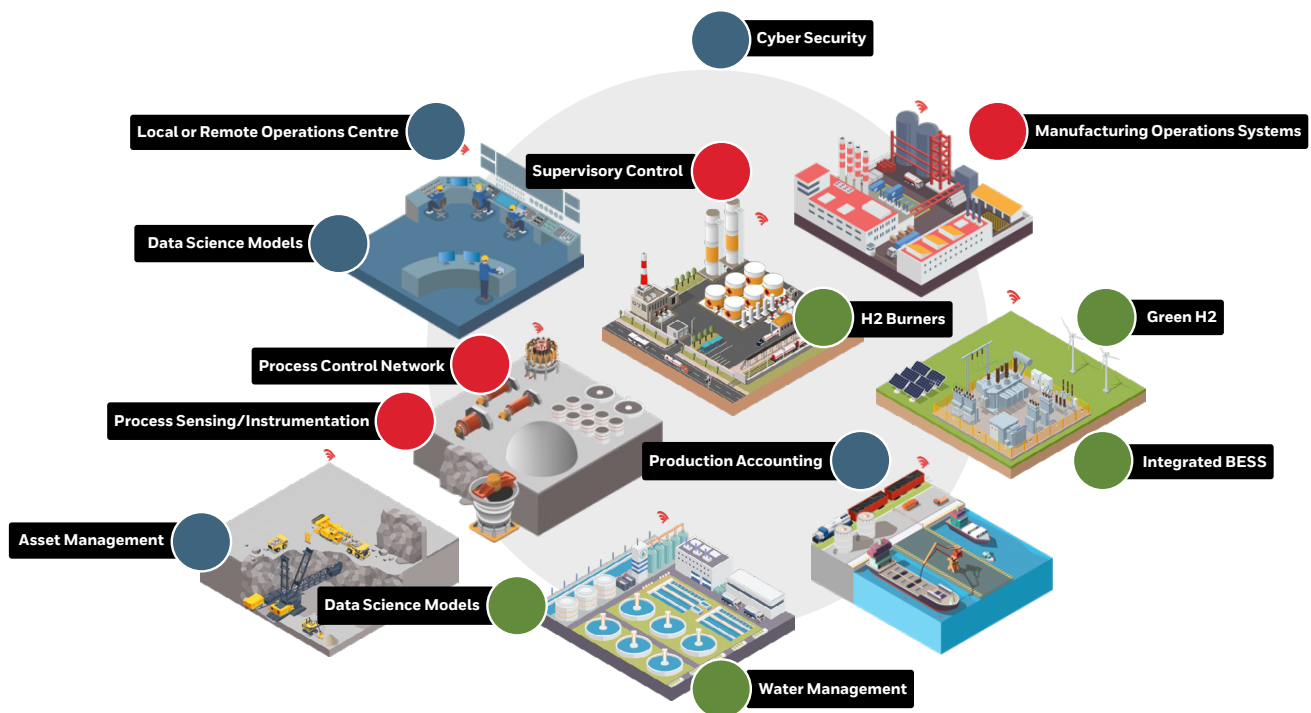


Mine-to-market agility

For executives navigating global mineral markets, we cut operational costs and enhance their agility to ramp up in line with market trends to seize spot-price opportunities.

UNMATCHED AND END-TO-END

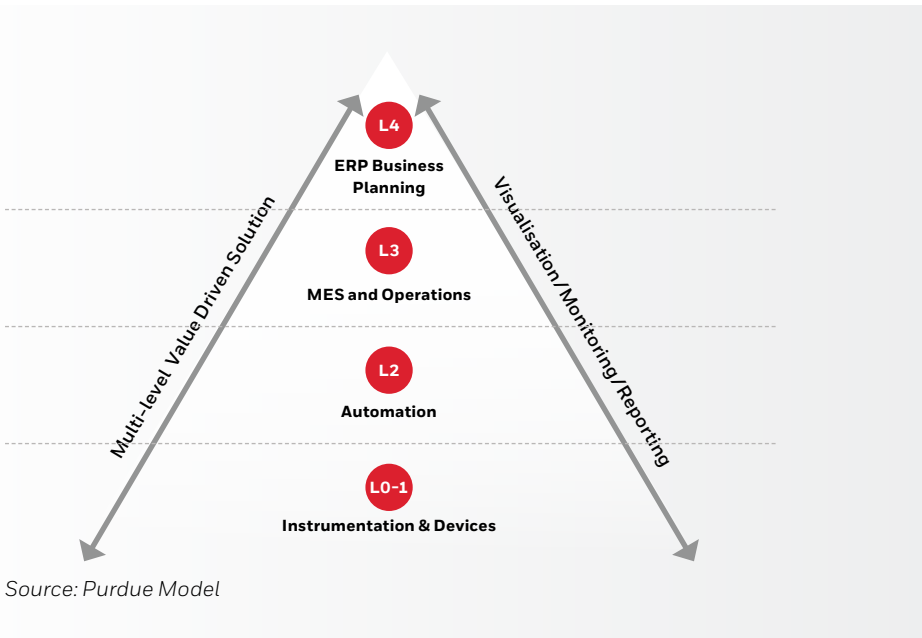
Right across the mining operation, Honeywell's technology enhances efficiency, reliability and safety to support better business outcomes.



IN THE BUSINESS OF OPERATIONS: BRINGING OT AND IT TOGETHER

Honeywell's technology and solutions integrate IT and operational technology (OT) to drive value. Across control, business systems and cyber security, we protect, optimize and enhance the operation and business.

At every level, we're second to none:



Levels 0-2

SCADA, DCS, PLCs and edge devices to drive operational efficiencies

Level 3

Manufacturing operation solutions to deliver process insights and enable optimization

Level 4

Cyber security to protect the business and avoid unplanned downtime

Our digital maturity strategy brings standardization, modularity and digital intelligence across all levels. We deliver leading solutions for every stage of operators' long-term digital roadmap and to realize near-term benefits.

CORE TECHNOLOGIES

The mining sector's integration of AI, machine learning, and IIoT needs advanced control systems. Honeywell's technologies leverage the latest advances to enable real-time monitoring, predictive maintenance, and data analytics. We empower operators to reduce downtime and optimize operations where traditional PLC-based systems fail.

PLANT CONTROL

Experion® PKS is not just a SCADA system. It integrates SCADA, DCS, PLCs and the safety instrumented system into a single platform, providing seamless operation and management of control systems in a unified environment.

It's one platform for all your needs. It brings together process control, safety systems, quality control systems, manufacturing execution systems (MES), supply chain management and real-time optimization with powerful features:



Advanced alarm management, including alarm shelving, dynamic alarm suppression, and alarm trackers



Equipment-based configuration to radically simplify configuration using equipment templates



Advanced HMIs with high-end displays, pan and zoom, and advanced interactions, supporting Abnormal Situation Management principles to help operators respond effectively



Advanced visualization tools to help operators and engineers analyze incidents and identify root causes quickly



CONTROLEDGE UOC

Advanced DCS capabilities at a PLC price point: Honeywell's compact Control Edge UOC supports a highly integrated and scalable control platform ideal for managing complex and extensive operations. It meets the needs of modern mineral processing for precise control and coordination of multiple processes.

Control Edge UOC seamlessly connects subsystems, enhancing operational efficiency, safety, and productivity. Flexible software licensing and an expansion IO network, supporting both Star and Ring topology, future-proof it for evolving process requirements and technological advancements, such as AI and IIoT.

CONTROLEDGE PLC

ControlEdge PLC is our versatile and robust controller that integrates seamlessly with Honeywell's Experion® system, providing a unified platform for control, SCADA, and DCS. This minimizes downtime through unified support and lowers the total cost of ownership by extending the system lifecycle.

With HART-enabled Universal I/O, the ControlEdge PLC offers remote configuration, late design change flexibility, and simulation capabilities, reducing hardware requirements and simplifying project implementation. It also supports multiple communication protocols such as OPC UA, EtherNet/IP, DNP3, Profinet, and Modbus.

HC900 SIS AND SAFETY

Honeywell's safety instrumented system offers comprehensive safety features and a state-of-the-art architecture for reliable monitoring and control to prevent hazardous incidents and maintain operational safety.

SIL2 certified, it provides a high level of safety integrity and cybersecurity certifications to protect against potential cyber threats. For applications requiring SIL3 functionality, **Safety Manager SC** offers an even higher level of safety and reliability to meet more demanding requirements.

ADVANCED SOLUTIONS

Honeywell Forge Advanced Process Control

Honeywell Forge APC controls and guides processes to the maximum operating profitability window by optimizing production trade-offs and maximizing yield on constrained variables.

With lifecycle maintenance tools and performance monitoring, our agnostic software solution uses process data and instrumentation to monitor, analyze, and control issues based on their financial impact. It provides multi-unit and plant-wide optimization to maximize productivity, energy efficiency, and throughput.

“The ability to track actual versus planned (projected) will separate the best mining companies from those that merely ride the commodity price curve.”

Source: Gartner



FROTH VISION ANALYTICS

Our vision analytics packages can help optimize flotation and grinding circuits, measuring precise characteristics to maximize value from APC.

Over 400 flotation cells have installed our froth vision analytics. Event detection alerts, ensure events such as froth breakage, are caught quickly to bring your process back to a steady state.

DIGITAL TWINS AND SIMULATION

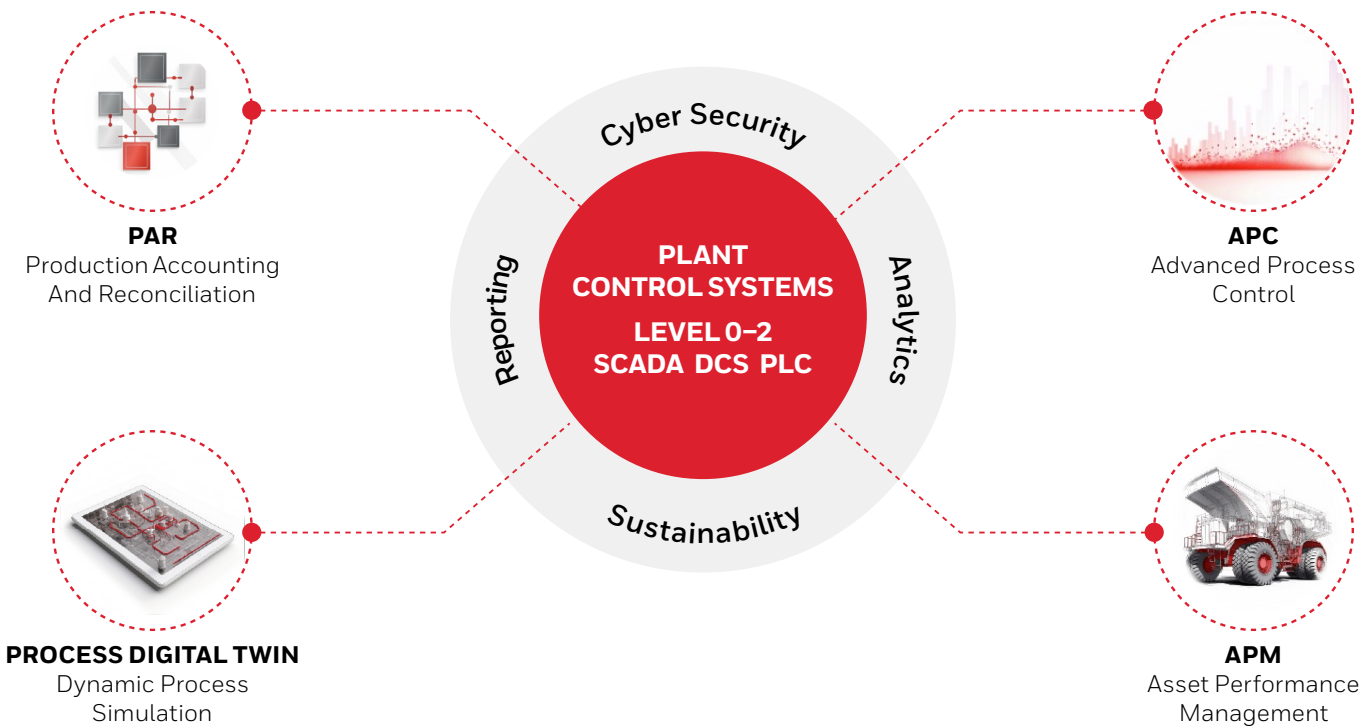
Our vendor-agnostic process control solution is enhanced with the UniSim® Design Suite. We empower process engineers and consultants to conduct retrofit analysis, what-if scenarios, and conceptual design simulations.

Honeywell's digital twin environment can speed up commissioning and improve operational margins.

ASSET PERFORMANCE MANAGEMENT

Honeywell APM provides a modular, scalable and enterprise-grade reliability platform. Predictive analytics monitor asset health and performance and anticipate abnormal behaviors to prevent unplanned downtimes and drive continuous improvement.

APM can help operations identify maintenance earlier, increase overall equipment effectiveness, perform quicker root cause analysis, and improve operational margins.

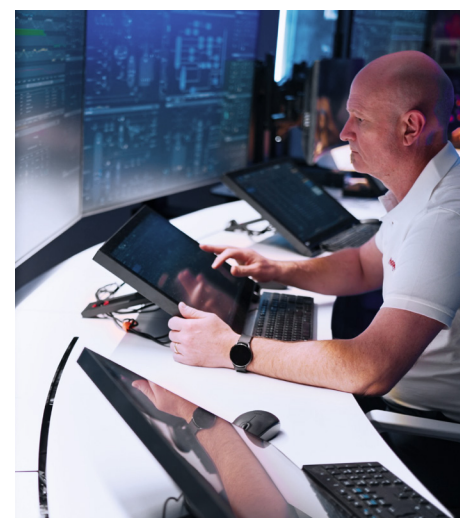


PROJECT DESIGN AND EXECUTION

Experion® Orion Control Room Design

The Experion® Orion Console is a revolutionary control room solution that enhances operator effectiveness, improves situational awareness, and reduces operational costs. Here are some of the key benefits of the Orion Console. Providing improved situational awareness and control across the entire mining process, it enables operators to easily manage a greater scope of responsibility.

Honeywell's Interactions Requirements Analysis (IRA) and Operator Role Complexity Analysis (ORCA) services are integral to our control room design. Our experts review operator actions and tailor HMI graphics to optimize interactions. We ensure operators can manage multiple sites effectively and accurately respond to process conditions.



LEAP

Honeywell's Lean Execution for Automation Projects methodology delivers on time and within budget even in the face of disruptions.

LEAP decouples hardware and software dependencies to avoid delays due to the sequential nature of hardware and software integration. Our Universal IO, Virtualization, and Cloud Engineering technologies allow for flexible and late changes in data and enable project staging in a data center, reducing the need for physical equipment until later in the project.

We take control systems off the critical path, cut maintenance, space, and energy use by up to 80% and enhance reliability through modular and pre-configured designs. Remote collaboration, execution, and testing significantly reduce project cycle times and labour costs. Virtual engineering and auto-commissioning eliminate up to 95% of manual efforts, while virtual factory acceptance testing and remote-assisted commissioning reduce labour costs and delays.

WHY HONEYWELL?

Honeywell brings decades of experience and expertise in industrial automation and over 12,000 process solution employees across 125 countries. We have more than 50 years minerals and mining industry experience and serve 75 of top 100 mining operators with technology in over 300 sites globally.

We continuously innovate, collaborate and excel, working with our customers and key industry players to solve the industry's most pressing problems and help define its future.



Honeywell Process Solutions

2101 City West Blvd, Houston, TX 77042

Honeywell House, Skimped Hill Lane
Bracknell, Berkshire, England RG12 1EB UK

Building #1, 555 Huanke Road,
Zhangjiang Hi-Tech Industrial Park,
Pudong New Area, Shanghai 201203

process.honeywell.com

BRO-A4-ENG | 441DPH | 11/25
© 2025 Honeywell International Inc.

**THE
FUTURE
IS
WHAT
WE
MAKE IT**

Honeywell