MineWare systems overview

September 2012
Harnessing the latest in advanced sensors, GPS and wireless Ethernet technology, dragline and shovel monitoring systems continue to drive key improvements in mine and machine performance, production, maintenance and safety.

Operating throughout Australia, North America and South Africa, MineWare is an international supplier of comprehensive monitoring systems. Since developing the industry’s first fully integrated dragline monitor in 2005 for coal leader BHP Billiton Mitsubishi Alliance, we have continued to advance our core technologies including the Pegasys Dragline Monitor, Argus Shovel Monitor, and remote monitoring and data visualisation tool mRoc Desktop.

We have grown to become the technology partner of choice for many of the world’s largest surface mining organisations. Our systems support the high production demands and minimal downtime requirements for more than 60 draglines and shovels in operation around the world.

The Pegasys Dragline Monitor and Argus Shovel Monitor are rich with features including comprehensive production monitoring, CCTV camera systems, high-precision GPS for mine plan compliance, and third party structural monitoring integration. Coupled with MineWare’s remote management tool mRoc Desktop, Pegasys and Argus also provide advanced off-board monitoring anywhere, anytime, straight to your desktop.

Today our technology continues to evolve. Committed to research and development, we work closely with our clients and research partners to maximise new advances in technology and support the future of mining.
Pegasys is a complete monitoring system for draglines incorporating production and structural monitoring, mine plan compliance, and integrated CCTV camera functionality.

Supporting dragline operations throughout Australia, South Africa and North America, Pegasys has enabled the mining industry to more accurately measure the performance of its draglines and adjust operations to improve efficiency and productivity.

MineWare’s dragline monitoring technology has assisted global mining leaders to maximise dragline performance and greatly enhance their compliance to plan. The advanced technology has also improved the safety of dragline operations through its integrated CCTV systems and logged data for incident investigation.

The Pegasys monitor provides immediate access to real time and historical data including production, machine location, vision system, and structural and electrical feedbacks.

Coupled with MineWare’s remote monitoring solution mRoc Desktop, Pegasys also provides teams with off board visibility of their operations at any time, from anywhere in the world with an internet connection.
features

production
Time usage and delay tracking
Cycle-by-cycle payload calculation using strain gauge model
Full suite of cycle-by-cycle performance metrics
Material digability calculation for assessing blast effectiveness
Operator logon system
“Sweet spot” bucket disengage guidance

machine guidance
Dig and spoil to plan
High precision GPS
Real-time bucket position calculation
Integrated mine plan and operator feedback
Compatible with standard mine plan design software suites (inc. Vulcan)
Cross-section view generation
Machine pitch and roll sensors

structural monitoring
Basic stress/duty calculation for every cycle
Capable of integrating 3rd party structural loggers
User configurable alarm system
features

**support**

- Modular design for ease of support and upgrades
- 24x7 support hotline
- Software assurance and version upgrade plans
- No custom hardware, all hardware available ‘off-the-shelf’
- Microsoft Windows and Microsoft SQL architecture
- Uncomplicated design/installation for ease of support
- On-board data buffering ensures zero data loss due to wireless network outages
- Evergreen warranty on hardware available
- Ethernet compliant architecture allowing for sophisticated remote diagnostics and fault repairs

**reporting**

- Production and time usage reporting
- User data-dumps for cycle and activity data
- Real-time operations visualisation with mRoc Desktop
- Allows custom report building
features

integration+ interfacing

Compatible with any 802.11 wireless network
Database API for easy data access
All data housed ‘on-site’
Data transfer uses standard industry formats
Real-time interfaces available on-board for positional data-sharing with third-party systems

cameras

Integrated camera system
On-board 2 week video capture and storage
On-board camera viewing for operator (including PTZ control)
Remote camera viewing
PRECISE | RELIABLE | REAL-TIME MONITORING

Improve shovel performance, production efficiency, plan compliance, operator performance, and safety with MineWare’s Argus Shovel Monitor.

Meeting the high production demands of open pit mining operations, Argus is an advanced monitoring system that addresses key issues of managing shovel payload, real-time truck loading, operator performance, and machine positioning.

Capable of monitoring any electric shovel on the market, Argus provides sophisticated operator tools on-board the shovel and provides management teams with real-time information for targeted management of shovel operations.

Coupled with MineWare’s remote monitoring solution mRoc Desktop, Argus also provides teams with off board visibility of their operations at any time, from anywhere in the world with an internet connection.
**features**

**production**

- Time usage and delay tracking
- Cycle-by-cycle payload calculation using strain gauge model
- Full suite of cycle-by-cycle performance metrics
- Material digability calculation for assessing blast effectiveness
- Operator logon system
- Independent wait-on-truck delay calculations

**machine guidance**

- High precision GPS
- Real-time dipper position calculation
- Integrated mine plan and operator feedback
- Compatible with standard mine plan design software suites (inc. Vulcan)
- Cross-section view generation for determining dipper distance from design crests and toes
- Machine pitch and roll sensors

**structural monitoring**

- Basic stress/duty calculation for every cycle
- Boom jacking detection
- Swing impact detection
- Capable of integrating 3rd party structural loggers
- User configurable alarm system
support
Modular design for ease of support and upgrades
24x7 support hotline
Software assurance and version upgrade plans
No custom hardware, all hardware available ‘off-the-shelf’
Microsoft Windows and Microsoft SQL architecture
Uncomplicated design/installation for ease of support
On-board data buffering ensures zero data loss due to wireless network outages
Evergreen warranty on hardware available

integration+ interfacing
Compatible with any 802.11 wireless network
Compatible with any brand/make shovel
Database API for easy data access
All data housed ‘on-site’
Data transfer uses standard industry formats
Real-time interfaces available on-board for positional data-sharing with third-party systems

reporting
Production and time usage reporting
User data-dumps for cycle and activity data
Real-time operations visualisation with mRoc Desktop
Truck loading compliance reporting
Allows custom report building
features

truck payload management

Real-time truck identification system
Dipper-by-dipper truck load calculation and operator feedback
Truck loading performance reporting

cameras

Integrated camera system
On-board 2 week video capture and storage
On-board camera viewing for operator (including PTZ control)
Remote camera viewing
mRoc Desktop is a real time, off-board monitoring tool that delivers valuable data from our Pegasys and Argus monitoring systems straight to your desktop. mRoc Desktop’s technology is revolutionary in its design and function, giving mining organisations greater access to—and visibility of—their shovel and dragline operations from anywhere and at any time.

- Live fleet status straight to your desktop
- View the operator screen from any location
- Gather and share data across the enterprise
- 3D visualisation of machine activity
- Real time monitoring of machine performance
- Live video
- High precision GPS technology
- High frequency data feeds
Operating in remote, hostile environments with high expectations for availability, one of the key challenges for high technology mining applications is service and support. The skills and support required to keep such systems working are in short supply.

MineWare’s Integrated Support Centre (ISC) is a compelling example of how today’s advances in remote monitoring technology are fast shaping the future of global dragline and shovel operations.

Established in the heart of Australia’s mining technology centre, the Brisbane-based ISC currently monitors and supports over 60 draglines and shovels around the world. A leap ahead of traditional dragline and shovel support approaches, the centre vastly improves the efficiency with which MineWare’s monitoring systems on site are maintained.

The ISC also facilitates the fast turn-around time of information assisting managers to respond quicker and become more proactive based on trends identified. It can interface with one or more draglines or shovels at multiple sites in real time, fully mobilising information and presenting it in a context that builds a complete picture of what is happening on any machine—as and when it happens.

- Delivers more efficient and effective service and support to deployed systems
- Increases visibility of operational data
- Reduces time to resolve system product issues
- Creates a collaborative environment for engineers and content experts
- Provides remote diagnostics and tuning of on-board systems

We have established the ISC as a demonstration centre for industry to see first hand the opportunities presented by MineWare’s advanced technology infrastructure.
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