

Completely Integrated Solutions
for the Mining Industry

SIRAS for SIMINE^{CIS} DICONT

Remote diagnosis and performance
monitoring for mobile mining
equipment

Your Success is Our Goal

SIEMENS

Industrial Solutions and Services

With SIRAS™, Siemens Remote Access System, Siemens offers mine operators two software packages that utilize modern wireless technology for remote access, control, monitoring, and high-level production and maintenance functions. SIRAS supports access and control from anywhere in the world to minimize life cycle ownership costs.

The challenge

When a machine goes down, the challenge is how to fix it as quickly as possible. The SIRAS Remote Diagnostics system addresses this challenge by allowing experienced Siemens engineers to access and control the onboard-maintenance computer, the drive control system and the machine PLC from anywhere in the world without the delays, expense, and inconvenience of traveling to the job site.

For production, maintenance and operator training personnel, the machine is seen from the perspective of its behavior and how this behavior can be improved. The MIDAS system addresses these issues by allowing the user to monitor performance in real time or through a stored log file using custom interfaces and reports.

In both cases, SIRAS uses existing or custom hardware to establish the link to the machine and make the information available in the mine office and over the Internet.

Our solution

The connection from the equipment in the pit to the mine office is established via a wireless link using a stand-alone wireless LAN or an existing wireless network. In either case, the link provides access for local mine users and a high-speed VPN (Virtual Private Network) or standard dial-up connection connects remote users.

Five good reasons for SIRAS and MIDAS

- Immediate expert factory support from anywhere in the world reduces downtime
- Onsite access from the mine office using PC-friendly screens and reports adds value
- A troubleshooting tool set enhances maintenance capabilities and reduces costs
- Daily and/or weekly monitoring (optional) by Siemens personnel compliments local skills
- Compatible with existing systems such as MineStar and Modular Mining



From the maintenance computer ...

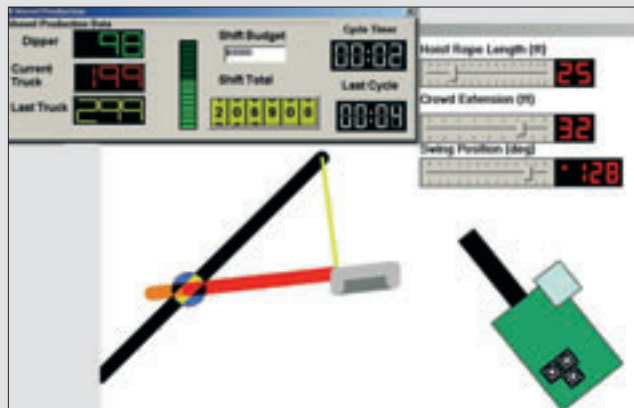
The maintenance computer is the first line of defense for all machine issues because it simplifies the different systems on the machine and implements active logic screens to clearly identify which components or systems have failed. SIRAS Remote Diagnostics gives the remote user full access to the machine's sophisticated maintenance system so that the user can connect to the drive control system, conduct real-time recording, view parameters, and perform a variety of other tasks.

... to full remote support

Not only can the user read information from the on-board computer, but he can also write to it. For instance, the PLC program can be modified to bypass a faulty temperature sensor, or the drive control system can be modified to adjust the torque curves or annunciate a particular event. Every function an experienced user could do locally is now available remotely. SIRAS Remote Diagnostics brings remote support of mining equipment to a new level of sophistication. This translates into less downtime, lower costs, and increased productivity.

Information when and where it's needed

Production, maintenance, and training personnel need to know how the machine is behaving during normal operation. MIDAS – a module of SIRAS – make this data available simultaneously to multiple users, in real time or later via log files. Log files allow users to review what happened at the instant a fault occurred or, when



coupled with flexible reporting and display options, provide insight into factors that effect machine productivity and availability.

A 2D model of the machine (shown above) depicts the machine motions in real time, including the positions of the control levers and the operator gauges, or log files can be played back to recreate a specific event.

Opening the door for improvement

The built-in report generator provides data such as the best/worst cycle times during a shift and can be used to pin down why one operator may outperform others. Trainers can use this information to increase operator efficiency – and move more tons per shift. Over 30 charts and graphs are available with data that can be exported into Excel™ or other Windows™ applications.

MIDAS allows users to see data and identify issues relevant to their jobs so that they can better operate and maintain mobile mining equipment.

Stay ahead with top-notch service

Siemens' service organization supports customers in maintaining peak machine performance throughout the entire life cycle. To this end, we provide professional service from the design stage through installation, commissioning, and in-field optimization.

SIRAS includes advanced diagnostic tools that can be used while the machine is in operation, including remote troubleshooting via the Internet. Software upgrades can be downloaded remotely to minimize downtime and ensure peak performance over the life of the machine.

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CIS = Completely Integrated Solutions

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SIMINE^{CIS} – Completely Integrated Solutions for the Mining Industry

As a comprehensive industry-specific solution for the mining industry, our SIMINE^{CIS} product family integrates all the products and services you need for sustained maximization of your plant's performance.

For each particular task, a solution has been defined that

- **horizontally** improves all production processes – from excavation to beneficiation
- **vertically** integrates the company's information flow end-to-end, helping corporate management to make better-founded decisions
- and **chronologically** enables optimized maintenance and comes with assured further development over the whole life cycle of your plant.

Due to this unique combination of horizontal, vertical and life cycle dimensions, our solutions all carry the genes of an exhaustive and sustained plant productivity in their very core.

For more productivity. More performance. More power. Completely Integrated Solutions from Siemens.