UNDERGROUND MINING

ABB Ability™ Performance Optimization for hoists
Lift your productivity to a higher level
ABB Ability™ Performance Optimization for hoists improves uptime, availability, performance and productivity of mine hoists by providing actionable information on Key Performance Indicators (KPIs). Data is automatically collected, monitored and analyzed to generate actionable insights that can increase production performance, identify safety hazards, and provide optimized maintenance scheduling.

Performance Optimization for hoists follows a proven three-step methodology: identify, categorize and prioritize opportunities to improve mine hoist performance. Performance data is collected and analyzed using advanced analytical tools provided by the ABB Ability™ edge platform. Data visualization then allows site engineers to identify any discrepancies and take remedial actions. Remote access to ABB experts is available which allows for faster identification and resolution of problems.

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<td>Automatic, non-invasive data gathering</td>
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<td>Configurable alerts provided when KPIs are outside site-specific thresholds</td>
<td>Accelerated problem identification and resolution</td>
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Key Performance Indicators (KPIs)

Improve hoist performance using actionable information on key parameters

Performance Optimization for hoists identifies, categorizes and prioritizes Key Performance Indicators (KPIs) for the following areas:

1. **Hoist normal operation**: To ensure optimal production, deviations of KPIs, such as hoist capacity flow (tons/hour), motor speed and current are tracked and analyzed. If the deviations exceed site-specific thresholds, alarms are triggered that notify site personnel and ABB experts, who are monitoring the system remotely.

2. **Safety brake system**: To ensure controlled retardation, brake capacity and function are monitored and emergency stops are analyzed.

3. **Hoist supervision**: To ensure timely actions, hoist supervision system is monitored for any deviations and alarms are triggered if deviations exceed limits.

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Remote access

Actionable information on KPIs

Firewall

ABB Ability™ Edge Device

Actionable information on KPIs

Hoist normal operation

Safety brake system

Hoist supervision
ABB Ability™ Performance Optimization services for hoists combine the benefits of reduced downtime and failure risk, extended equipment life cycle, minimized equipment damage as well as improved availability and safety.
Data Analytics
Monitor, analyze and improve hoist performance

1. Simplified view of data and analysis
   - Data visualization allows site and ABB service experts to view data associated with Hoist normal operation, Safety brake system or Hoist supervision.
   - Data analytics identify categorize and prioritize KPIs based on severity and criticality.

2. Critical notification when it matters most
   To help prioritize issues that require immediate action, site-specific limits are applied to the targeted KPIs. If KPIs exceed limits, an instant alert is triggered that allows ABB experts to quickly assess problems.

3. Expert analysis to detect and resolve potential problems early
   To ensure optimal hoist performance, ABB provides monitoring and performance analysis. ABB experts evaluate the amount and degree of deviation, determine the statistical accuracy of the KPIs and find trends that predict possible irregularities. This results in continuous improvement actions that address potential problems early and increase asset utilization.
ABB Ability™ Collaborative Operations
Increase efficiencies of hoist systems across multiple locations

**Collaborative Operations**
Performance Optimization for hoists uses powerful analytics to extract valuable information from asset and process data at a customer site. The value of data analytics is fully realized when an expert determines the subsequent course of action. The capability to simultaneously look at performance data at multiple sites, plays a critical role in identifying improvement opportunities for the enterprise. Aggregating data from multiple sites and collaborating with experts in real-time, improves productivity and efficiency for mine hoists. ABB Ability™ Collaborative Operations is helping mining companies across the world to improve their productivity.

**ABB Ability™**
Collaborative Operations is built on the ABB Ability™ platform; our unified, cross-industry, digital capability that extends from device to edge to cloud. This platform securely collects data from devices at sites, applies advanced analytics and generates actionable insights for customer operations at the site level. Furthermore, the platform aggregates data from multiple sites into the cloud so that asset and performance issues can be identified, categorized and prioritized for proactive improvement actions.

ABB experts at Collaborative Operations Centers connect with customers in real time to quickly identify and resolve issues.
ABB Ability™ MineOptimize

ABB Ability™ MineOptimize is a four-pillar framework that simplifies and unifies optimized engineering, optimized solutions, digital applications and collaborative services to bring new levels of performance across the mining enterprise. Collectively, this framework helps mining end-users achieve the most efficient design, build and operation of any mining or mineral processing facility.

With ABB Ability™ Collaborative services, ABB specialists can be connected with in-house teams, either remotely or on-site and in real-time, providing a suite of digital services ranging from remote assistance to predictive maintenance and performance optimization. One such service is ABB Ability™ Performance Optimization for hoists, which improves hoist performance using actionable information on key parameters. Data is automatically collected, monitored and analyzed to generate actionable insights that can increase production performance, identify safety hazards, and provide optimized maintenance scheduling.

ABB acts as single source supplier with global integration experience for electrical, instrumentation and control that provides a fast track way of moving mines from costly and reactive time-based maintenance to planned preventive and predictive interventions. Through remote services, predictive maintenance and upgrades and retrofits, ABB helps mining companies ensure maximum performance throughout the mine’s life cycle.