

Innovation that Saves

SmartMine Collision Awareness Solution (CAS) Underground

SMARTMINE IoT

Mining meets efficiency, by turning data into profit



The Schauenburg Smartmine IoT Solution

SmartMine IoT is an all-in-one IoT and data analytics platform that is revolutionising the mining industry with its open architecture software. By turning device/asset data into insights SmartMine gives you a bird's eye view of all your mining operations, enabling smarter, quicker and more data driven decisions making for a smarter and more productive tomorrow. Experience the future of mining - Today



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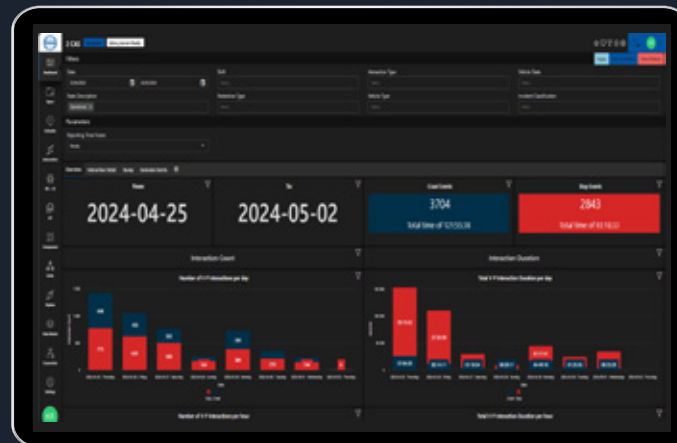
www.schauenburg.co.za

SmartMine CAS Overview

SmartMine Collision Awareness Solution for underground mining leverages data driven insights to enhance safety, optimise traffic flow, and drive operational efficiency.

By driving trend analysis, optimising traffic management, fostering a safety culture, and enabling continuous improvement through data analysis, SmartMine CAS empowers mining companies to mitigate risks, protect personnel and assets, and achieve sustainable success in underground mining operations.

SmartMine CAS integrates seamlessly with Schauenburg's CAS technologies to enhance safety and productivity in mining operations.



SmartMine CAS Overview

This system combines collision avoidance technology, near real-time data processing, and advanced algorithms to provide you with a holistic view of your CAS graphical insights for your mining operations to enhance the safety of your workers, optimise your processes and increase productivity within your mining operation.

The SmartMine CAS Underground allows for:



Monitoring of metrics such as the number of near-misses, adherence to safety protocols, and response times to collision alerts, using the dashboard to track progress towards safety goals and identify areas for improvement.



Identification and detection of recurring patterns and trends using historical data, to implement targeted interventions to address underlying causes and reduce frequency of incidents.



Monitoring of compliance with regulatory standards by tracking relevant metrics and generating of reports for audits.



SmartMine CAS – Key Features

Productivity Aspects:

- **Operator Efficiency Assessment:** Evaluate how effectively operators are performing their tasks
- **Machine Utilisation:** Understand how machines are being used, identify periods of inactivity, and analyse the causes
- **Idle Time Analysis:** Determine the reasons behind idle time

Infrastructure Aspects (1st Priority):

- **Access Points Monitoring:** Keep track of access points (S-Links) to ensure they are operational
- **Vehicle Data Completeness:** Ensure that vehicles have successfully downloaded necessary data and completed the downloads, ensuring data accuracy and completeness for reliable analysis and decision-making

Safety Aspects:

- **Incident Capturing and Investigations:** Capture details of incidents that occur and provide tools for thorough investigations
- **Playback Functionality:** Utilise playback features to visualise incidents with detailed asset, zone, and distance information
- **Monitoring Unsafe Acts and Conditions:** Continuously monitor for unsafe acts, and unsafe conditions, to proactively address safety issues

Asset Management Aspects:

- **CAS System Monitoring:** Ensure the CAS system is available, utilised effectively, reliable, and in good condition
- **Condition Monitoring:** Regularly assess the health and status of the CAS system and its components



SmartMine CAS – Key Features

- Holistic view, LEVEL 9, STOP and CRAWL events
- Enables you to improve assessments of vehicle interactions
- Proximity detection of other vehicles or hazards
- Vehicle-to-Vehicle/Vehicle-to-Person/Vehicle-to-Hazard detection
- Investigate historical STOP and CRAWL events leading up to incidents
- Identify patterns of risk within a cluster of events
- Exclusion events analysis
- Manual and/or Automated Reporting



- E-mail and WhatsApp alerts
- Shift Congestion monitoring & assessment
- High risk interaction assessment
- Incident capturing & investigation – playback with asset/zone/distance visuals
- Monitoring and assessing of unsafe acts & conditions
- Pedestrian / Operator risk behaviour
- CAS system – Availability, Utilisation, Reliability, Condition monitoring



Benefits of SmartMine CAS Underground

Improved Safety

By analysing the data CAS devices, SmartMine CAS underground can identify high-risk vehicles, operators and pedestrians allowing the implementation of targeted safety measures, e.g., implementing speed restrictions or signage in areas of frequented near misses.

Continuous Improvement through Data Analysis

Insights derived from data analysis can lead to ongoing refinements in collision avoidance strategies. This ensures that the system evolves over time, staying adaptive to changing conditions and advancing safety measures.

CAS Aids In:

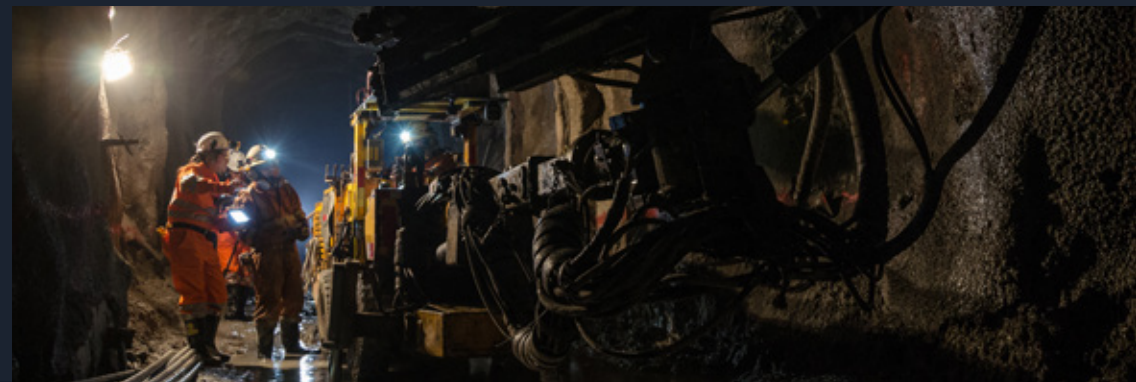
(1) Identifying high risk resources to improve safety by training of adjusting traffic management, (2) identifying unsafe conditions such as unhealthy equipment utilisation to react accordingly and mitigate the risk, (3) analysing near misses and incidents for audits and investigations.

Optimised equipment utilisation

Provide insights into equipment usage patterns, downtime reasons, and operational inefficiencies. By analysing this data, mine operators can optimise equipment utilisation, schedule maintenance proactively, and minimise costly downtime.

Optimised Traffic Flow

SM SCAS Underground can provide insights into traffic patterns, congestion hotspots, and bottlenecks within the mine site. Using these insights, mine operators can implement strategies to optimise traffic flow, such as adjusting haulage routes, optimising vehicle scheduling, or deploying traffic management personnel to redirect traffic away from congested areas. This optimisation could lead to fuel savings, decreased equipment wear, and enhanced overall operational efficiency.



SmartMine Collision Awareness Solution (CAS) Underground

Empowering mining companies to mitigate risks, protect personnel and assets, and achieve sustainable success in underground mining operations.

Powered by

**SmartMine
IoT**



Occupational Safety
Solutions

Lamp Room Asset
Management Solutions

Collision Awareness
Solution - Surface

We can build It

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