4sight | OT | AUTOMATION



CASE STUDY

KIPUSHI ZINC PROJECT

PIONEERING SOLUTIONS FOR ENHANCED CONTROL SYSTEM EFFICIENCY

IVANHOE MINES

2023

CUSTOMER SUMMARY

Ivanhoe Mines Ltd. is a leading exploration and development company primarily focused on mineral resources in Africa. One of its flagship projects, the Kipushi Zinc Project, situated in the Democratic Republic of Congo (DRC), holds significant promise in the global zinc market.

The Kipushi Zinc Project is strategically positioned in the prolific Central African Copperbelt, renowned for its rich mineral deposits. Ivanhoe Mines Ltd. acquired the project, which boasts a long history of zinc production dating back to the early 20th century. With previous mining activities ceasing in the 1990s due to economic and political challenges, Ivanhoe Mines aims to revitalize and optimize the project's potential.

PROJECT OVERVIEW

The Kipushi Zinc Project marked a significant milestone in the mining and processing industry, focusing on the comprehensive enhancement of the control system. The project, undertaken by 4Sight OT Automation, encompassed a wide range of tasks, including the design of Control System architecture, development of panel drawings, software standards, and applications, as well as the procurement, manufacturing, testing, and commissioning of various hardware components.

CHALLENGES

Before the implementation of the Kipushi Zinc Project, the mining and processing operations faced several challenges:

1. Outdated Control Infrastructure: The existing control system was outdated and lacked the sophistication required for modern mining and processing operations.
2. Inefficient Hardware Integration: The integration between hardware components, including PLC, RIO, and network panels, was inefficient and contributed to operational bottlenecks.
3. Non-standardized Software: The absence of standardized software applications made it challenging to manage, maintain, and troubleshoot the control system effectively.
4. Procurement Complexity: The procurement process for hardware and software components lacked precision, leading to compatibility issues and potential system failures.



SOLUTION

The Kipushi Zinc Project implemented a comprehensive solution that addressed these challenges:

1. Advanced Control System Design: A state-of-the-art Control System architecture was designed, encompassing hardware and software requirements. This design formed the backbone for a more efficient and modern control infrastructure.
2. Detailed Panel Drawings: Thorough panel drawings were developed, guiding the manufacturing process for PLC, RIO, and network panels, ensuring alignment with approved designs and drawings.
3. Software Standards and Applications: Rigorous software standards were established, and control system software applications were developed in adherence to these standards. This ensured seamless integration and improved system performance.
4. Precise Procurement: 4Sight OT Automation handled the procurement of all hardware and software components with precision, ensuring compatibility and reliability for the entire Control System scope.
5. Quality Control and Assurance: Factory Acceptance Testing (FAT) procedures were conducted for both hardware and software components, coupled with comprehensive Quality Control and Assurance documentation to ensure the robustness of the system.
6. Effective Project Management: The project was managed comprehensively from inception to on-site commissioning, ensuring timely execution and successful project completion.

RESULTS

The successful implementation of the Kipushi Zinc Project resulted in:

1. Enhanced Operational Efficiency: The modernized control system significantly improved operational efficiency, providing a seamless experience for mining and processing operations.
2. Reliable Hardware Integration: Standardized components, including RIO panels and conveyor panels with IFM ASi IO, enhanced hardware integration, reducing downtime and improving overall system reliability.
3. Streamlined Network Architecture: The implementation of Rockwell DLR and 55 ETAP switches improved network architecture, contributing to a more stable and efficient system.
4. Advanced SCADA System: The integration of Factory Talk SE SCADA & Historian provided a powerful and user-friendly interface for monitoring and managing the entire control system.



AUTOMATION

Incorporated in 2017, 4Sight is a JSE AltX (ticker: 4SI) listed, multi-national, diversified technology group. Our purpose is to leverage our extensive product and services portfolio, focused on 4IR technologies, people and data-focused solutions to design, develop, deploy and grow solutions for our partners (customers and vendors).

The company's mission is to empower our partners to future proof their businesses through digital transformation to make better and more informed decisions in the modern digital economy.

4Sight's business model enables its partners to take advantage of products and solutions within its group of companies, which will allow them to enjoy turnkey digital transformation solutions across industry verticals.



CONTACT US

EMAIL sales@4sight.cloud WEBSITE www.4sight.cloud TEL +27(0) 12 640 2600

SOUTH AFRICAN OFFICES

4Sight@Centurion
1001 Clifton Ave,
Lyttelton Manor,
Centurion,
0157

4Sight@Germiston
2 Jonas Road,
Unit 22 Knightsgate Industrial Park,
Germiston,
Johannesburg,
1400

INVESTOR RELATIONS

investors@4sight.cloud