

Title

Integrated Mining Operations for Improved Performance: Applying ISA S95 as an enabling Framework

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Abstract

Each step change in technology redefines what “real-time” improvements actually mean and how businesses can be run. The industry faces the use of different technology, organizational issues, lack of common terminology,(same terms often used for different things by different groups),lack of consistent being solved representation of data, different views of what is important, and different metrics. Today, innovations in the areas of integrated computing, mobility and cloud computing mean that "real-time “improvements for the first time actually means real time. People can access up-to-date business data and systems wherever, whenever and however they need to. The flow of business information in exploration, mining and minerals processing has accelerated to real time, where the plant is integrated to sensors, controls, performance KPI's ,and business improvements. Real-time integration offers significant opportunity for intervention on all manufacturing related issues. For the miner it represents an opportunity for agile responsive operations and positive impact on cash flows. This paper describes the use of ISA S95 standard to improve information flow between the plant floor, the automation system, the manufacturing execution level and the enterprise resource planning levels. It also shows how measurable performance is generated. Examples used are a Mine to Port Iron Ore application and an induration furnace value generation application using ISA –S95 standards and Business Intelligence models.

The Problem being solved

Many leaders in the mining industry are realizing that collaboration between the mine, concentrator, smelter and port can help effectively operate and improve productivity and efficiency . To do this more information sharing needs to occur both horizontally and vertically within the organization. This requires leveraging new technologies such as networking, visualizations and above all information sharing in the proper context and reach. The ISA S95 Standard acts as an enabling frame work to allow business value solutions to be implemented.

Development

This application uses an ISA S95 model .plus Spider diagrams(Gap Assessment) and a business value model to provide proper information flow and value generation to insure that the correct information is available across the business enterprise and that the improvements are aligned with corporate strategies.

1.4 Conclusions The solution developed provides a roadmap for implementing a collaborative, value based environment with values generated in the order of 3-5% incremental revenue generation..

1.5 Future perspective This methodology has been used to provide a collaborative enterprise view for users, anytime, anywhere, in any medium and provides a platform for future functionality