Machine Traceability

VALE

General Vision

Problem: Collision of equipments in the finished products' hall.

Solution: Usage of RFID tags to correct the positioning of equipment.

Advantages: Robust and safe solution for the agressive environment with humidity 24/7.

Benefits: Positioning accuracy, which prevents encoder fails and collisions.

Target: Miners.

ACURA Global solution benefits the productivity of the biggest miner in the country

The RFID usage helped Vale prevent accidents with the mine's equipment.

Vale is one of the most important mining companies in the world, producing and commercializing iron, pellets, alumina, aluminum, concentrated cooper, coal, nickel, bauxite, potassium, kaolin, manganese and ferroalloys ore. The investment in research is one of their priorities. For that, they have a complex logistic which involves machines and workers in precise operations. This logistic was improved with ACURA's integration in a mining control solution. In Carajás, Pará, the order control from clients is now done automatically, thanks to the RFID technology. The concentration of ore needed to compose the specified product is transmitted to the process line, including trucks and loaders. This way, the workers know exactly the weight and type of the ore in the system and which is the concentration needed to compose the final product.

Ideal Products for the Solution

500.196 - MR-200 Reader

MR-200 Mid Range Multi-Tag Reader has aluminum body with IP54 protection, which is resistant to dust, dirt and water spill, appropriate for industrial usage.

For more information about this product, ***click here***.

500.149 - 300/300 Antenna

The 300/300 antenna operates with the MR-200 Mid-Range Reader. With a transmission power of 1.75 W it is possible to reach up to 55 cm reading distance.

For more information about this product, ***click here***.

100.004 - HF-1100-IH Tag

The HF-1100-IH tag operates at 13.56 MHz frequency in the ISO 15693 standard, allowing for a slightly better reading distance and keeping information trustability. Its sturdy encasing allows it to work in the most diverse environments, even applied on metal.

For more information about this product, ***click here***.

About the Solution

The Client: Vale, one of the most important mining companies in the world, produces and commercializes iron, pellets, alumina, aluminum, concentrated cooper, coal, nickel, bauxite, potassium, kaolin, manganese and ferroalloys ore, among others. They have a complex logistic which involves machines and workers in precise operations. The investment in research is one of their priorities.

Proposed Challenge: The positioning of forklifts and retakers in the finished products hall is now done through encoders which fail, consequently informing the incorrect position of the equipment in the hall. Occasionally there was a collision between equipments, which caused losses for machines stopping and repairing of expensive equipment. The equipment are remotely operated and have no operators.

Equipment: MR-200 reader and HF-1100-IH tags.

Features / Practical improvements: Through analysis done in the finished products' field, we defined the usage of tags through the rails where the equipment go through, and are recorded with their position inside the field. With this, the positioning system can be corrected avoiding incorrect positioning. We made the integration of the reader with the PLCs that control the equipment.

Gains / Benefits: We avoid the colision of expensive forklifts and retakers.

ACURA has a focus on the market of general identification, with emphasis on RFID (radiofrequency identification), providing RFID Tags (Transponders), Proximity Cards, RFID Readers and Data Collectors.