



Transport Control



General Vision

Problem: Transportation control by third parties, moving of trucks through loaders and high quality control.

Solution: RFID readers and long distance tags for control of third party fleets, tags for pile movement indication. On-board computers for the loaders and a highway balance and ticket printing.

Advantages: Solution for third party fleet control, and companion to mine production.

Benefits: End product overall quality increase, as the blending became more precise due to the loading being oriented by the onboard computer's software. Total visibility of operation times of equipment including loaders and fleet control.

Target: Miners, logistic.

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

The usage of RFID for mining control helped Vale attend to its customers with more accuracy and quality.

Vale is one of the most important mining companies in the world, producing and commercializing iron, pellets, alumina, aluminum, concentrated copper, 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



500.183 - Vega UHF Reader

The Vega UHF reader brings the technology and performance of the M5e module with the sturdiness of an industrial encasing in a single reader, projected to resist to the most severe environment, is ideal for vehicular application, where the reader is installed in the vehicle (In Vehicle Reader model).

For more information about this product, [click here](#).



500.149 - UHF USB Desktop Reader

The RFID USB reader is a low cost solution for both development environments as well as deployment environments. Following the same concept of the M5e-Compact UHF reader module, the USB reader is totally controlled and power supplied by a desktop or notebook computer.

For more information about this product, [click here](#).



500.277 - Compact Monostatic Antenna

Directional Compact Monostatic Antenna of circular polarization and elevated protection grade.

For more information about this product, [click here](#).



Smart SSS-15

The SmartStation SSS15 is an industrial computer made in stainless steel and with IP67 protection grade. The most recent unit projected by SmarTerminal for the area of health, chemistry and food industry. It has an Intel Atom processor and 15" touch screen display, designed to be the best in its category.

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 mine planning emits the order for the highway ore transportation from the Manganese Mine to the areas of expedition in the railroad terminal in the Iron Mine. To attend the end user the planning establishes the mix of different qualities in the manganese product. The measuring was done in a balance in the Iron Mine. As the cargo units were irregular, it wasn't possible to keep the quality of the mix, producing constant pile analysis and travel corrections.

Equipment: In the trucks, AcuTag UHF Ultra. In the loaders: AcuSmartStation, UHF Vega reader, UHF compact monostatic antenna. In the

balance: Vega UHF reader, UHF compact monostatic antenna, UHF USB Desktop reader, kiosk with Epson printer, Lamix Display and temperature/energy sensors.

Features / Practical improvements: Readers, antennas and computers were installed in the truck's loaders, and also tags which are updated with informations about the type of the ore, resources that were used and the moment of embarking. In the balance its weight plus its data are written by the loaders, are captured for tracking of mine production. In the passage the driver receives a ticket proving his travel, and a display shows where it must be taken to. In the expedition hall's discharge, another loader confirms if it is the correct location, updating the discharge moment. Energy and temperature sensors monitor the balance's environment for non-assisted operation.

Gains / Benefits: With our system, Vale now controls better the operation of transporting minerals which is realized by a third party, sensibly improving its performance and reducing needed work force for this operation.

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.

For more information about this and other ACURA solutions, visit www.ACURAGLOBAL.com

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