



Productivity and Security



### General Vision

**Problem:** The bulldozer traffic brought great danger of accidents, as due to the large size of the bulldozer, it was dangerous to roam near them.

**Solution:** Usage of Wave L-T100 tags in the helmets and Wave L-A210 readers in the bulldozers.

**Advantages:** Decrease in risk of accidents involving employees.

**Benefits:** Improved safety, avoiding material and human losses.

**Target:** Logistics.

## ***Votorantim Metals guarantee productivity with the safety of its employees***

*One of the solutions implemented by ACURA Global increases the safety of the workers in one of the biggest mining companies of the world.*

Votorantim Metals is among the ten biggest zinc producers worldwide, the biggest nickel producer in Latin America and the third biggest Brazilian manufacturer of long steel. In Brazil, there are eight industrial units and four mines located in São Paulo, Rio de Janeiro, Minas Gerais and Goiás. Out of the country, Votorantim Metals owns the Cajamarquilla refinery and the Milpo Mining Company, both in Peru, and is a major stakeholder of Acerías Paz del Río siderurgic company, in Colombia. In the Fortaleza de Minas - MG unit, where 10 thousand tons of nickel and 120 thousand tons of sulphuric acid are produced per year, an RFID system for employee's safety was adopted inside the mines.





## Ideal Products for the Solution



### 500.724 - L-A210 RFID Reader

The L-A210 is a powerful reader of compact dimensions. It works with the 433 MHz frequency and may be used standalone or with other readers in sequence. It reads active AcuWave tags and supports different types of antennas.

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



### 500.047 - Domino L-T100 Tag

Supplied by an internal lithium battery, the Domino Tag transmits a radiofrequency signal in a predetermined interval. It is developed for asset identification and management. It has compact size, is made in PVC and sealed by ultrasound.

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

## About the Solution

**The Client:** Votorantim Metals is among the ten biggest zinc producers worldwide, the biggest nickel producer in Latin America and the third biggest Brazilian manufacturer of long steel. In Brazil, there are eight industrial units and four mines located in São Paulo, Rio de Janeiro, Minas Gerais and Goiás. Out of the country, Votorantim Metals owns the Cajamarquilla refinery and the Milpo Mining Company, both in Peru, and is a major stakeholder of Acerías Paz del Río siderurgic company, in Colombia. In the Fortaleza de Minas - MG unit, where 10 thousand tons of nickel and 120 thousand tons of sulphuric acid are produced per year, an RFID system for employee's safety was adopted inside the mines.

**Proposed Challenges:** The bulldozers don't have great visibility of the nearby employees, which eventually causes accidents and even crushing. This risk increases when they have to move in less lit places.

**Equipment:** L-A210 reader and L-T100 tags.

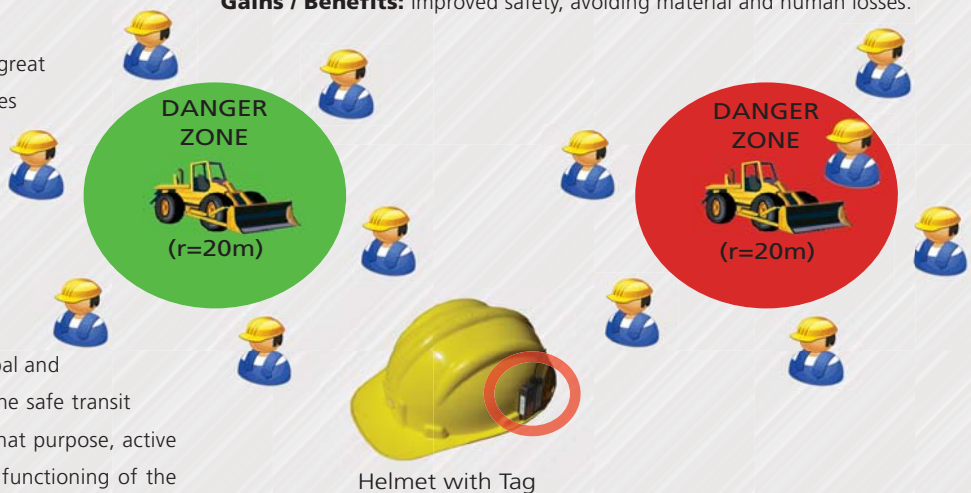
**Solution:** Usage of Wave L-T100 tags in the helmets and Wave L-A210 readers in the bulldozers.

**Functioning:** The system was projected by ACURA Global and consists in determining a safety zone which establishes the safe transit limit, so that there are no more machine accidents. For that purpose, active RFID readers and tags which, when activated, block the functioning of the

bulldozers at the moment an employee enters the 20 meters radius. This is possible with the installation of an LA-210 reader adapted to receive two customized ACURA Global antennas and also with the creation of a circuit, developed to activate the general machine key when a tag or more is read. The tags were affixed to the worker's helmets since they were already a mandatory item for the mines.

**Features / Practical improvements:** With this automatic system, accidents are avoided and the worker safety is a priority.

**Gains / Benefits:** Improved safety, avoiding material and human losses.



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](http://www.ACURAGLOBAL.com)

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