

## CASE STUDY

### Indian aluminium company tracks deliveries VEHICLE TRACKING/MATERIAL HANDLING for its mining facility in India



Tracking a fleet of over 3,000 trucks every day bringing in coal and bauxite to its aluminium smelter requires constant monitoring of both contractors and employees along with the weight of coal being delivered to the plant.

#### Company:

Vedanta, Orissa, India

**Facility:** Aluminium Smelter, Iron Ore, Power Plant

#### Challenge:

- Tracking of inward/outward movement of truckloads of material (coal) along with real time gross, tare and net weight.
- Earlier installed RFID system had poor reads on account of metallic environment and did not provide vehicle arrival and departure data.



Vehicle Tracking Process

#### Proposed Solution:

- Essen RFID mounted RFID tags on the windshields of cars and trucks, in order to track employees and coal deliveries en route to the power plant. A read range of up to 50 feet (17 metres) from cars traveling up to 21 miles per hour was accomplished by customizing the reader, which has a built-in antenna.
- The reader Xtenna™, powered with Power-over-Ethernet (PoE), captures the unique ID number of each vehicle's tag, and forwards that information to the software system integrated with the power plant's back-end SQL database. It also helps trigger the boom barrier.
- The gross weight and tare weight are fed into the unmanned weighbridge system which estimates the net weight and provides real-time data to the back-end system by generating a SMS.

#### Realised Benefits:

- System provides protection from pilferage of coal or ore
- Helps boost efficiency
- Ensures transparency across the entire value chain

#### Potential Next Steps:

- To incorporate across all entry/exit points and weighbridges

#### TECHNOLOGY

##### Solution:

EPC Gen2 compliant vehicle tracking/material handling system

##### Tag Type:

Parka™ UHF Passive

##### Reader/Antenna:

Xtenna™ Long Range

##### Read Range:

17 metres (50 feet)

##### Method:

Multiple Tracking via Integrated Reader/Antenna modules

**Number of modules:** 4

##### Integration Platform:

**RFID Middleware:** Xtenna™ Studio

**Application:** Essen RFID's Vehicle Tracking System and Material Handling System

**Database:** SQL Server 2005 Exp. ed.

##### Tag Manufacturer/Supplier:

EsSEN RFID

##### Reader/Antenna Manufacturer:

EsSEN RFID

##### Systems Integrator:

EsSEN RFID

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