

Industrial Wireless Connectivity for Mining

RFID Boom Barrier
Success at **Mahanadi
Coalfields, India**

A black and white photograph of a mining site. In the foreground, there is a large pile of dark, irregularly shaped rocks or coal. Behind the pile, a metal boom barrier is visible, partially open. The background shows the structural elements of a mine, including concrete walls and metal beams.

CONNECTING YOUR WORLD

Introduction

Mahanadi Coalfields Limited (MCL), a leading coal producer in India and subsidiary of Coal India Limited, manages a diverse range of open-cast and underground mines across Odisha. Faced with the challenge of securing vehicle access and automating entry/exit at multiple locations, MCL awarded this project to Bharat Electronics Limited, who deployed an advanced RFID boom barrier system connected by Wavesight's robust wireless technology.

Deployment of RFID Boom Barriers and Dual-Redundancy Networks

Wavesight RF Radios were supplied, installed, tested, commissioned and continues to support the seamless functioning of the automatic RFID-based boom barrier solution across various MCL mine sites. The system leverages cutting-edge wireless transmission technology, providing seamless point-to-point and point-to-multi-point radio connectivity between server rooms and boom barrier control cabins.

Redundant network architecture was established using radio networks alongside internet leased lines for reliability—ensuring mining operations and access control remain uninterrupted. This integration supports real-time monitoring and automation, crucial for large-scale industrial environments.

Wireless Radio Technology from Wavesight

Wavesight's deployment included 96 Firefly AC500 SA wireless radios fitted with external antennas, designed for industrial-grade applications. These radios offered high-capacity, long-distance connectivity vital for outdoor and remote mine locations, supporting data backhaul and access control across the mining complex.

Key Benefits of Wavesight's wireless solution:

- Reliable industrial wireless connectivity for critical infrastructure
- Seamless integration of RFID boom barrier systems for efficient, automated entry/exit management
- Dual-redundancy via radio and leased line networks to maximize uptime and operational safety
- Scalable point-to-point and multi-point network architecture optimized for large mining operations

Impact and Value Delivered

The automated RFID boom barrier system, powered by Wavesight's wireless transmission platforms, has helped MCL achieve secure, scalable access control and network reliability across its Odisha coal mines. This project advances digital transformation in the mining industry, setting benchmarks for asset management and operational efficiency in challenging industrial environments.