Your challenge

Mine tailings are recognised as a huge environmental problem and represent significant risk to mining operators. The status and condition of tailings dams need to be constantly monitored in order to ensure safe operations, avoid environmental damage and revenue loss in the event of a failure, and to address regulatory concerns.

Most monitoring is carried out manually, requiring engineers to physically attend the site and assess conditions on the dams. This process is inefficient and risky, requiring time and resource, while posing a potential safety hazard for workers.

Due to the isolated nature of many tailings dams, and the prohibitive cost of terrestrial infrastructure networks, remote monitoring has not been widely implemented.

Our solution

Inmarsat’s Tailings Dam Monitoring Solution enables smarter and faster decision making, improved safety standards and helps to support regulatory compliance.

The managed service allows businesses, auditors and regulators to view every data point, from every dam, instantly, on one dashboard for a single monthly fee.

We work with our instrument partners, or yours, to connect an array of sensors measuring pond elevation, piezometric pressures, inclinometer readings and weather conditions, by means of Long Range Wide Area Network (LoRaWAN) infrastructure.

These LoRaWAN-enabled devices report at regular fixed intervals to a LoRaWAN gateway, which has the ability to aggregate data from 5km-15km, dependent on terrain.

The data is then transmitted from the edge to a secure cloud dashboard via Inmarsat’s L-band Broadband Global Area Network (BGAN) satellite link.

The customisable cloud dashboard is accessible to company employees, as well as third party auditors and regulators, so data can be analysed in near-real time for faster reactions to events, issues and alerts.

The managed service includes the initial implementation at each tailings site, in-life support, along with a training programme for local operational teams.

Connectivity services

- Long Range Wide Area Network (LoRaWAN)
- Broadband Global Area Network (BGAN)

Tailings Dam Monitoring Solution is for you if...

- Your business needs to monitor and manage tailings dams, and avoid significant risks associated with a failed dam
- Your data collection is sporadic, unreliable, costly and slow to collect
- You need to comply with national and industry regulation
How it works

Inmarsat’s L-band satellite network
Edge intelligence and transmission
LoRaWAN conversion
Inmarsat’s L-band satellite network
Cloud data compilation
Dashboard

Sensor

Where we deliver

Due to the unique nature of Inmarsat’s geostationary satellite network we can deliver highly resilient, mobile communications services across the world. Global Xpress (GX), our Ka-band service is delivered through our Inmarsat-5 (I-5) satellites, while Broadband Global Area Network (BGAN) is delivered, through our Inmarsat-4 (I-4) satellites.

Where required, our ecosystem of local partners will deliver onsite warranty, support and repairs, and Inmarsat will ensure that all license and regulatory compliance will be in place.

Benefits

- Smarter and faster decision making
- Improved safety standards
- Helps to support regulatory compliance
- Global coverage with rapid deployment at any mine, worldwide
- Improved efficiency and worker safety by site visit reduction
- Best in class reliability trusted by the world’s leading mining operators

Features

- Cloud dashboard provides real-time visualisation, alert functionality, audit history and interoperable APIs and data export
- Single contract and one monthly fee which covers equipment, service plan and support
- Emergency failover means your equipment is always connected
- BGAN, L-band connectivity offers 99.9% network reliability
- Training provided for basic troubleshooting and maintenance
- In-region technical support
- Secure data management with 24/7/365 network monitoring
- Sensor agnostic integration capabilities

About Inmarsat

Inmarsat is the leading provider of global mobile satellite communications services. Since 1979, Inmarsat has been providing reliable voice and high-speed data communications to governments, enterprises and other organisations, with a range of services that can be used on land, at sea or in the air. Inmarsat operates around the world, with a presence in the major ports and centres of commerce on every continent. Inmarsat is listed on the London Stock Exchange (ISAT.L). For more information, please visit www.inmarsat.com.

About Inmarsat Enterprise

Inmarsat Enterprise is the leading global provider of satellite-enabled connectivity and managed connectivity services for land-based organisations. We are enabling the Industrial Internet of Things (IoT) and helping transform business outcomes across a diverse set of sectors, including agriculture, aid and NGO, media, mining, oil and gas, renewable energy, transport and utilities.

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For more information

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