

- UHF and VHF operation
- High noise rejection
- Low latency
- ARQ and FEC error recovery
- 500mW to 5 Watt operation

## Underground Shaft Management System

In the mining industry the safety and well-being of workers is an ever-increasing concern. This means reliable and safe equipment for transporting personnel and machinery is a high priority for mine operators.



Tecom Australia has utilised STI Engineering radios for more than 8 years in their underground Shaft Management Systems (SMS). The SMS allows for reliable wireless control and voice communications from a trolley or skid to the winder.

The system has been successfully installed on more than 30 shaft and trolley operations in Australia and worldwide.

The Tecom Australia SMS is a modular system consisting of a head-end rack in the winder house, leaky feeder antenna and amplifier infrastructure throughout the shaft, or decline, and a skip installation including user controls, power supply and sensors.

The SMS was designed with safety as a primary concern. Features such as slack rope detection, cage door sensors and emergency stop allow for the ultimate safety of passengers.

Communication features such as multiple levels of CRC error checking and constant communications ensures no stray messaging and minimum message delay, while active watchdog monitoring means extremely fast transition from system failure to emergency shutdown.

In addition to the SMS features the STI Engineering radios offer transport layer Automatic Repeat Request retries and Forward Error Correction, coupled with high receiver noise rejection to maintain low latency reliable communications even in a high noise environment. Low latency communications are critical for higher reactivity for the user controls and failsafe wireless operation.

The radio also offers selectable power levels, easy to use configuration, local and remote diagnostics and simplex, duplex and split port options. This allows for flexibility and ease of installation making the data radio suitable for any underground installation scenario.

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