

Diamond Mine Video Tracking System

COFDM - Video, Audio Telemetry and IP Products

COBHAM

May 2011 Case Study

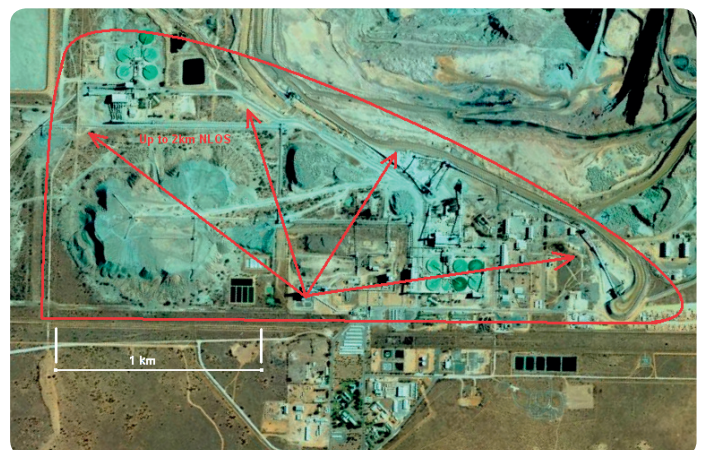
The most important thing we build is trust



The De Beers Jwaneng mine, in south-central Botswana, is the world's richest diamond mine, producing in excess of 13 million carats of diamonds per year. The mine's security team wished to introduce a mobile video surveillance system to allow them to monitor the vehicles carrying the mineral-rich diamond concentrate from the re-crush area to the production plant.

The solution chosen was Cobham Surveillance's SOLO4 COFDM range of wireless video transmitters and receivers, able to provide a robust, mobile, secure link between the concentrate-carrying vehicles and the main security control centre. 1W transmitters, installed on board the vehicles, were able to stream high-quality video along their entire 1.5 mile route, back to receivers in the security control room.

The success of this installation further demonstrates the ability of Cobham Surveillance's COFDM technology to provide robust, digital video, audio and data links in particularly harsh RF environments.



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SOLO4 Transmitter



SOLO4 Receiver

COFDM Transmitters

The SOLO4 Transmitter from Cobham Surveillance is a feature-rich COFDM digital video, audio and data transmitter. The SOLO4 Transmitter can operate in a variety of transmission bandwidths, allowing the user to trade off image quality against range to suit all types of environments. Excellent range, performance and spectral efficiency are provided when operating in the unique 2.5MHz and 1.25MHz narrow bandwidth modes. For excellent image quality at shorter ranges, the 8MHz DVB-T modulation can be employed. The SOLO4 Transmitter is the first to offer this choice in one product. MPEG2 and MPEG4 image compression is also a user selectable feature.

The SOLO4 Transmitter is ideal for establishing rugged wireless video links in many environments including subterranean and open cast mining environments. The SOLO4 Transmitter is available in a variety of frequency bands from 300MHz to 5.9GHz. Able to transmit images in a non-line of sight environment up to 1km, depending on mode and frequency, the SOLO4 Transmitter can achieve further range with the clip-on booster PA.

COFDM Receivers

The SOLO4 Receiver from Cobham Surveillance is a feature-rich diversity input digital video, audio and data receiver, equipped with two antenna inputs with external down-converters, to allow antenna placement remote from the receiver housing. The SOLO4 Receiver operates a maximum ratio combining digital diversity, ensuring video is recovered free from the distortions typically associated with fading and multipath. The SOLO4 Receiver is compatible with multiple COFDM transmission formats from 8MHz DVB-T to the unique 2.5 and 1.25MHz narrowband modes proprietary to Cobham Surveillance. Incorporating MPEG2 and MPEG4 video decoding, the SOLO4 Receiver is suitable for many mining environments. The Cobham Surveillance narrow bandwidth modulation offers unprecedented spectral efficiency, whilst increasing system sensitivity and, therefore, range. The SOLO4 Receiver has comprehensive on screen display diagnostic capability to show link quality and spectrum, enabling users to optimise transmission performance. The SOLO4 Receiver is equipped with video, two voice and data channels, and is designed for easy integration into command vehicle, mobile or central receive installations.

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