



Application Profile: Satellite for Tracking Vehicles in the African Mining Business

The Customer Situation

In the remote regions of Western Ghana, a gold mining company was faced with the dilemma of choosing between building a new gold mill at a mining site where gold ore was recently discovered and milling at an existing site 80km/50miles from the new location. Like many other companies operating in the Sub Saharan region and around the world, the company had to incorporate the priority of balancing the cost with optimization and efficiency.

The Challenge

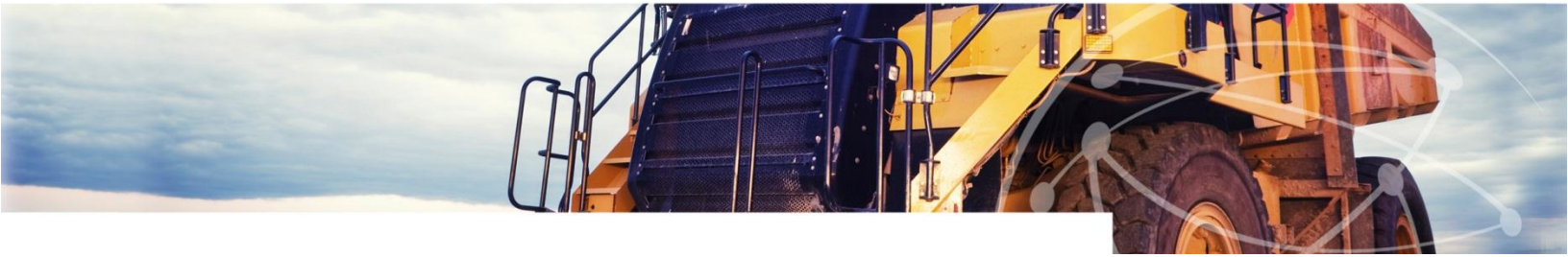
Because the new gold mill would carry an intensive cost and there was an alternative that would require a relatively short haul, it made financial sense to transport ore to the existing mill site rather than invest in new infrastructure to achieve maximum results and benefits. While this would help to keep major capital investment costs down, the mining company still struggled with the logistics and security of the ore being transported between sites.

The visibility issues associated with transportation could not be solved with a cellular solution because the infrastructure in Western Ghana didn't offer consistent communication that conformed to security standards required by the mining company. Three major challenges emerged as the trucks moved ore from the pit to the mill site:

1. The mining company was not able to reliably monitor the location of trucks.
2. Drivers could not share information about bad roads, fallen trees, flooding, vehicle breakdown, etc. This slowed operations drastically because the route could not be completed and U-turns on harrowing mountainous terrain were impossible.
3. In-transit fuel theft and gold ore theft were a major issue that added to operating costs and reduced profitability.

SkyWave
WIRELESS DATA
COMMUNICATIONS

inmarsat



The Solution

A SkyWave Solution Provider developed a unique solution for the mining company using SkyWave's satellite/cellular terminal to transmit data between office staff, site operators, drivers and assets.

Using the SkyWave-based solution, the mining company can now communicate with the drivers and monitor the trucks regardless of the quality of the cellular network. Data from fuel-level sensors connected to the SkyWave terminals is sent via text message for real-time monitoring. The same process is used to track any change in cargo weight while trucks are in transit.

SkyWave terminals were installed in each truck and offer the following features:

- Office personnel work from a web portal to send and receive messages, which may include monitoring and tracking data or texts from drivers. Canned messages are preloaded for recurring tasks and issues. A two to three word text message "Fallen Tree" or "Stuck in Mud" gives the recovery team all the information it needs to solve the issue on the first visit. The solution also allows dispatch to warn drivers of upcoming weather conditions, change in routes etc.
- The solution's scalability allows a configuration for real-time fuel monitoring. Data transmission intervals can be remotely configured to meet the company's needs, whether on-demand, once per hour or once every few days. SkyWave's terminals also enable location-based decisions, including how often to transmit data based on programmed geofences.

About SkyWave

SkyWave Mobile Communications is a global provider of wireless satellite and satellite-cellular data communications for the Machine- to- Machine (M2M) market. SkyWave's M2M portfolio of communication terminals and network services enable applications that provide businesses with the capability to track, monitor, and remotely manage their fixed and mobile equipment. SkyWave delivers real-time information when you need it -- to and from anywhere in the world.

- Haul roads are geofenced to help prevent drivers from making unauthorized stops in specified zones, to prevent ore theft and fuel siphoning. The solution is designed to monitor the speed of a truck. For instance, if the speed drops below 2km/hr for 30secs in an unauthorized zone, a Red Alert message is sent every minute to the office based control station for immediate action. This allows the control station to immediately dispatch a patrol team as security protocol dictates.

The Results

The SkyWave solution enabled real time vehicle monitoring and driver scheduling for ore haulage. Managers know where vehicles were at any time in transit and are informed immediately if a truck cannot move forward. This has cut the average travel time between the mine and the mill significantly.

With the introduction of satellite communications, unauthorized stops, ore theft and fuel siphoning issues were eliminated. Managers were able to monitor fuel usage in real time and know exactly when and where fuel losses were occurring - reducing losses, costs and delays while creating an optimized and efficient working team.

SkyWave
WIRELESS DATA
COMMUNICATIONS

inmarsat