

ENABLING the connected world

Key benefits of Inmarsat's L-band powered IsatData Pro communication service:

- 1** Performance – IDP offers low latency, consistent data transmission
- 2** Global – provides unparalleled worldwide coverage
- 3** Reliability – 99.9% network availability over the I-4 global satellite network
- 4** No roaming charges – IDP uses Inmarsat's global network, so no roaming charges apply
- 5** Lower cost – competitive hardware and airtime packages enable low cost setup

Ivanhoe Mines

Ivanhoe Mines works with Inmarsat to improve driver safety at world's largest high-grade copper mine

The challenge

Ivanhoe Mines' flagship Kamao-Kakula project is situated 25km west of the provincial capital Kolwezi, in the Lualaba Province of Democratic Republic of Congo (DRC). It has been independently ranked as the world's largest undeveloped, high-grade copper discovery, with the Kamao copper deposit discovered in the 2008, followed by the high-grade Kakula deposit in 2015. During this exploratory phase there has been significant movement of people and supplies across the sites and the regional base in Kolwezi.

The state of the DRC's roads posed a significant risk to their contractors, geologists and administrative staff as they travelled between sites during the exploration process. Potholes as big as three metres in size, lack of maintenance and the remote location of many of the roads were just some of the factors that meant a journey that would normally take a few hours, could take several days. Dust clouds obscuring the driver's vision meant that there was a greater likelihood of accidents occurring, and damage was often done to vehicles by gravel kicked up by other vehicles. The unpaved roads were also very susceptible to flooding and thick mud during the rainy season, which could cause further issues for drivers, who often needed towing assistance.

Access to the site is through unmade roads to the villages of Kasekelesa and Musokantanda, which meant that ensuring the safety of their inhabitants, who were suddenly confronted with more traffic became a priority. The fleet managers also had no idea where their 30 off-road vehicles, trucks and ambulances were at any given time, leading to concerns around security. To compound matters, terrestrial connectivity outside of urban areas was patchy and unable to properly support any type of fleet management application in the region.

The solution

With the need to understand where vehicles are and how quickly they are moving, to ensure safety and security, Ivanhoe Mines turned to Inmarsat, the leading provider of global mobile satellite solutions, to assist. Inmarsat utilised the Skywave IDP-780, powered by its highly reliable L-band connectivity service, to enable a mission critical telemetry solution for tracking assets. The solution allows the control centre to visualise the vehicles and includes a number of geofences set up to enforce policies introduced by Ivanhoe Mines to improve driver and public safety and security. Reports are automated at night so that managers can cross-check inventories to see that assets are where they should be.

Matthieu Bos, Vice-President, Corporate Development at Ivanhoe Mines, explained some of the measures introduced by the company: "We wanted to reduce the speed at which our drivers travel on the roads, to reduce the damage done to vehicles if they hit potholes or other obstructions, and the risk of accident. Inmarsat's solution enables us to track the speed of every vehicle every minute, and if this speed exceeds 80 kilometres per hour over a period of time or over 30 kilometres in certain zones the office is notified and can contact the driver to instruct them to slow down. We can also monitor location with pinpoint accuracy, so that if a vehicle hasn't moved in some time, we can contact the driver to establish whether they've had an accident or a breakdown."



Inmarsat's satellite connectivity has been critical to the success of Ivanhoe's Kamooa-Kakula driver safety project. The fleet management solution required consistent connectivity across the entire field of operations, large areas of which are not covered by cellular networks. Inmarsat therefore provided a dual satellite-cellular tracking device and fleet management solution, which utilises GSM connectivity where available and then switches seamlessly to Inmarsat's satellite connectivity when required. This provides a consistent and reliable communications network between control centre and vehicles, delivering real-time updates

to Ivanhoe Mines on vehicle status and location, enabling the company to act to secure the safety and security of their staff and assets if necessary.

The benefits

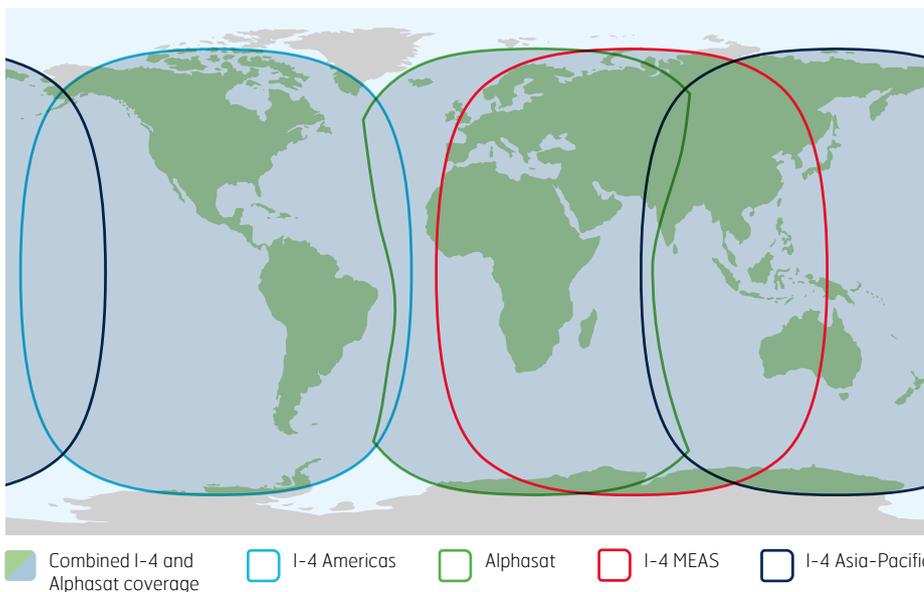
Matthieu Bos, explains the benefits the company has seen since the deployment of Inmarsat's solution: "Our top priority is making sure our staff and the public are safe. Inmarsat's solution, enabling us to track vehicles across the region is delivering this key business objective. We have seen a notable decrease in issues for our drivers out on the roads, and the speed of

resolution of these issues has also improved immensely. We now have complete confidence that we will be instantly aware of any issue with a driver or vehicle and can respond immediately to provide assistance. Additionally, we have improved relations with people from our local communities by reducing disruption as our vehicles pass through their villages."

Matthieu Bos, Vice-President, Corporate Development at Ivanhoe Mines:

"We are also confident that the risk of theft is significantly reduced with Inmarsat's solution, as we can see where our assets are at all times. It has been instrumental in moving people, equipment and supplies to where we need them to be. Overall, the solution is helping to improve our bottom line, and has been integral to the successful development of this world-leading mine project."

Inmarsat I-4 network coverage



This map depicts Inmarsat's expectations of coverage following the commercial introduction of Inmarsat's fourth L-band region. It does not represent a guarantee of service. The availability of service at the edge of coverage areas fluctuates depending on various conditions.

About Inmarsat

Inmarsat plc 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 organizations, 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.

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