



APPLICATION STORY



Avoiding accidents with mining vehicles

FLIR Systems PathFindIR thermal imaging camera helps to avoid sometimes deadly accidents.

South Africa is a world renowned leader in the mining industry. Not only is it famous for its mineral resources, which account for a significant proportion of world production, but the country's wealth has been built as a direct result of it's vast mineral resources.

Approximately 90% of the planets platinum resources, 80% of it's manganese, 73% of it's chrome, 45% of it's vanadium and 41% of it's gold resources are produced in South Africa. The only exceptions to SA's bounty are crude oil and bauxite.

Mining industry in South Africa

South Africa is the leading producer of precious metals such as gold and platinum, as well as base metals and coal. It is the world's fourth largest producer of diamonds. Experts believe that there is still considerable potential for further discoveries in other areas which have yet to be fully exploited.

The mining industry is also South Africa's biggest employer, with around 460,000 employees and another 400,000 employed by the suppliers of goods and services to the industry.

Trysome Auto Electrical Parts Distributors

Trysome Auto Electrical Parts Distributors, is the single largest source supplier of auto-electrical heavy duty components in Southern Africa.

Established in 1991 and based in Jet Park, Johannesburg, South Africa, Trysome has

branches in key mining districts in South Africa. Their focus is on providing specialized auto electrical components and safety solutions for heavy duty, earth moving, construction, agricultural, transport and mining machinery.

Accidents with mining trucks

"The mining industry is a huge market in South Africa.", explains Mr. Eddie Smith, founder and Managing Director of Trysome. "We supply the mining industry with cameras and other safety systems for their trucks and other heavy equipment. It is of little consequence whether mining is carried out in open cast mines or underground, the equipment utilized is always huge and heavy, and as a result any accidents which occur are usually serious."

"In addition to the equipment being extremely large and heavy, an added complication is that the driver is sitting in a very elevated position.



Mr. Wayne Jeffrey, National Sales Director, Mr. Eddie Smith, Managing Director, Mr. Tinus Diedericks, Timeless Technologies.



Accidents in which mining trucks are involved are always serious. This car was run over by a mining truck.

This elevated position results in the driver not always being in a position to see what is happening directly in front, to the side or to the rear of his vehicle."

"Not having a clear view of what is happening around him can result in sometimes deadly,





The PathFindIR thermal imaging camera can easily be mounted on front of a mining truck.



accidents. A mining truck, for example is such a huge vehicle that if the driver cannot see a normal LDV parked in front or behind him, he may accidentally drive right over it. Because the vehicle is so large and the terrain often rough he may not even be aware that he has driven over an obstacle and will simply continue to travel. Accidents of this nature are a regular occurrence since people do not always realize the danger of being close to one of these vehicles.", Eddie Smith further explains.

Avoiding accidents

"In order to avoid these types of accidents, Trysome supplies a wide range of cameras and other products that are currently being installed on mining vehicles. Some of the vehicles are equipped with an 8m radar system which warns the driver when something is in his path. In addition to the radar system we can also install GPS Traffic Alert systems which warn the driver timeously of any possible accidents."

"The truck may also be equipped with cameras. These can be mounted on the front, the side and the rear of the vehicle. Images are relayed to a 7" LCD display screen located inside the cabin. Before starting his vehicle the driver should

check all sides of the vehicle to ensure that the road is clear. Some of these cameras are even equipped with infrared illuminators so that the driver has a comprehensive view even when it is getting dark."

"Cameras with infrared illumination can however, only be used for short range observations. Furthermore, vehicles utilized for open cast mining often need to operate in foggy or poor weather conditions which are often complicated by dust. Fog and dust are not ideal conditions for the utilization of CCTV cameras or infrared illuminators."

PathFindIR thermal imaging cameras

"We were looking for another technology that can help drivers of mining vehicles to avoid accidents. After some research we got in contact with Mr. Tinus Diedericks, distributor of FLIR Systems thermal imaging cameras in South Africa."

"When we found out what the FLIR Systems PathFindIR thermal imaging can do, we were impressed. Not only does it produce a crisp image in total darkness, but it can also see through light fog, dust and smoke. Exactly what is required for a mining vehicle."

"We are currently installing the first 68 PathFindIR thermal imaging cameras on board of mining vehicles. They are easy to integrate and are being mounted on the front of the vehicle. The images the PathFindIR produces are displayed on a large LCD screen located inside the vehicle's

cabin. The driver has the ability to switch on the thermal imaging camera at all times, however the thermal images are automatically displayed on his screen once he reaches a pre-determined speed (this differs from site to site). In this case we want him to look at the thermal images regularly. Not only during the night, but also in daytime since the PathFindIR assists vision in dusty, as well as foggy weather conditions, Eddie Smith further elaborates.

Potential for thermal imaging

"The first installations were carried out on vehicles operating on open cast coal mines, however it is of no consequence if the vehicle is being utilized for coal, gold, diamond or any other type of mining operation. In all applications there will almost always be dusty conditions and all will benefit from having a thermal imaging camera installed. Other big and heavy equipment such as excavators, wheel dozers etc which are required to operate in dusty conditions can also easily be equipped with thermal imaging."

"Mining equipment utilized for underground applications also have to deal with dusty and dark conditions and they too can be equipped with thermal imaging cameras."

"Compared to the cost of a vehicle and the money that is subsequently lost due to involvement in mining accidents, the cost of installing a PathFindIR thermal imaging camera is a minor and negligible expense. For this reason more and more companies are considering the installation of PathFindIR thermal imaging cameras on their vehicles", concludes Eddie Smith.



The thermal images produced by the PathFindIR are displayed on a 7" LCD display inside the trucks cabin. They help the driver to avoid accidents.



For more information about thermal imaging cameras or about this application, please contact:

FLIR Commercial Vision Systems B.V.
 Charles Petitweg 21
 4847 NW Teteringen - Breda - Netherlands
 Phone : +31 (0) 765 79 41 94
 Fax : +31 (0) 765 79 41 99
 e-mail : flir@flir.com
 www.flir.com