VALE CASE STUDY:

A SAFE WORKPLACE IS NO ACCIDENT

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Headquartered in Brazil, and present in more than 30 countries, Vale is one of the largest global natural resources companies in the world. They pride themselves on creating long-term value, through excellence and passion for people and the planet. It was this passion for the safety of their people which provided the catalyst for them adopting Optalert's early-warning drowsiness detection systems in key mining sites across the world.

Vale Senior Medical Assisant, Carla Manuel is based in their Occupational Health and Hygiene team in Mozambique and takes us through their drive toward a safer and more alert fleet across the company.

"Fatigue is certainly one of the main factors associated with accidents among operators in mine areas, as operators are at risk of falling asleep while driving. Optalert therefore provides an important tool since it can identify the first signs, reducing the risk of accident due to drowsiness."

"Vale has a management program that deals with fatigue and uses Optalert's products as detection devices on workers with fatigue. During the working day, if a worker presents two consecutive high risk warnings in a 20-minute interval, they are summoned and requested to park their equipment."

"Secondly, if that worker is identified as presenting a considerable number of high alerts during a four-week period, their manager will send them from the mine to the health department (clinic) in order to determine the cause. At the clinic we conduct all necessary tests to determine the root cause of the problem."

"IN A NUTSHELL, WE CAN SAY THAT OPTALERT'S TECHNOLOGY IS USED AS A CRUCIAL TOOL WHEN IT COMES TO FATIGUE IDENTIFICATION SIGNALS."

Vale Driver using Optalert's technology while in a simulator in Mozambique

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OPTALERT ASSISTING BEHAVIOURAL CHANGE

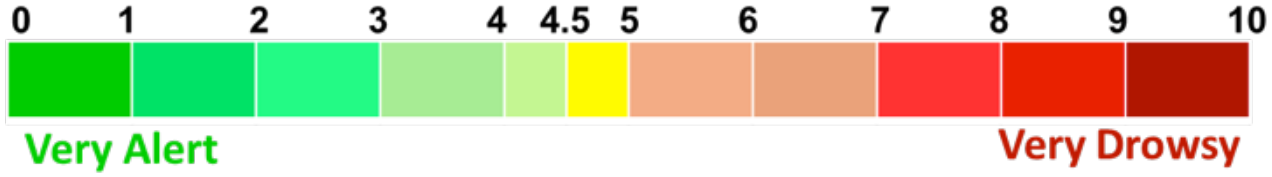
"During the early stages of the introduction of this technology, we registered a large number of high risk warnings during a driver's shift. Over time, the number of high risk warnings dropped considerably. The mining sector in conjunction with the clinic made a survey of all 2014 data recorded from Optalert, and we could clearly see a reduction. We also think the awareness and increased responsibility among the workers played a huge role."

> "WE ALSO HAVE REPORTS FROM THE SECURITY DEPARTMENT THAT CONFIRMS A REDUCTION OF ACCIDENTS DUE TO FATIGUE SINCE THE INTRODUCTION OF OPTALERT'S TECHNOLOGY."

HOW DOES OPTALERT'S TECHNOLOGY WORK?

Optalert is the only company in the world using scientifically-proven technology to actually predict the risk of an incident of drowsiness occurring.

The key lies in Optalert's patented Johns Drowsiness Scale (JDS™) that uses a simple 1-10 measure to inform a user of his or her state of alertness accurately in real time. The JDS™ is a world-standard method using data collected by a user's eyelid movement, or blink.



OPTALERT BY THE NUMBERS

1000+
Number of Vale drivers protected by Optalert every day

300+
Number of Vale vehicles with Optalert's technology installed

1,000,000+
Number of hours of protection for Vale staff to date

>69%
Reduction in risk of fatigue-related incidents

*Data correct as of 27 October 2015

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OPTALERT'S COMMITMENT TO VALE

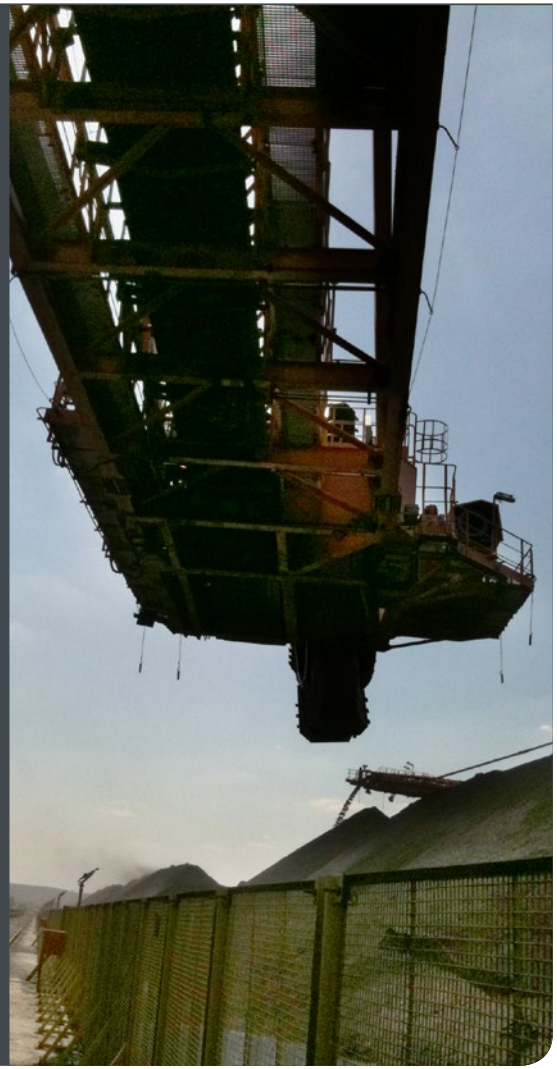
It is critical with any safety system that it is implemented correctly, and users, their supervisors and all related personnel understand how the system fits within the greater fatigue management plan. Optalert has a dedicated Vale account team who visit their sites regularly. On every visit, our team spends time with operators, supervisors, management and key operating staff to ensure Optalert's systems are working to their optimal level.

Account team roles onsite:

- System installations
- Stock review
- Training
- Performance analysis and recommendations to management for process improvements and industry best practice
- Reinforcing the importance of drowsiness detection

Remotely we also provide:

- Daily support, round-the-clock, 365 days a year
- Weekly contact via phone, webcam and instant messages
- Performance monitoring, benchmarking and driver compliance
- Feedback to management about operators with high levels of risk in real time and through trend analysis



USER FEEDBACK

"The mining sector is very happy with this tool and results, since it identifies drowsiness early, has improved behaviour among drivers and has reduced the number of related incidents."