

Caterpillar will install no-doze system for mining trucks

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(Phys.org) —Construction and mining equipment company Caterpillar, in a deal with an Australia based technology company, will use fatigue-fighting alert systems in mining vehicles. The technology company, Seeing Machines, has provided Caterpillar with a solution that focuses on eye and face tracking. The system is a combination of sensors, alarms and software to make sure a driver is not about to nod off. The technology aims to prevent accidents caused by fatigue. Driver Safety Solution (DSS) is the name of the technology, which makes use of eye tracking algorithms to detect sleepiness and distraction. The DSS solution, by the very nature of urgent response requirements, monitors and manages alerts real-time. DSS uses a console-mounted camera to detect the state of drowsiness.

A remote sensor on the dashboard observes the operator's eyes while driving. The truck cabs are fitted with an infrared lamp, with light invisible to humans, but allowing the camera to see in the dark and through the driver's safety glasses. An [accelerometer](#) and GPS chip confirm the truck is being driven at the time, and the computer behind the driver's seat processes data. The system can tell if there is an onset of "micro-sleep." This is when a fatigued person passes out for even a fraction of a second to half a minute, before waking and without realizing any such micro-sleep had taken place.

As soon as the computer software recognizes micro-sleep, it can trigger an audio alarm and there is also a motor built into the driver's seat to vibrate and rouse the driver. Site dispatchers are notified as well and the support staff can view a video feed of the driver's eyes and get data about behavior. Newmont Mining carried out trials and a Newmont Mining spokesperson told the [BBC](#) it believed DSS had reduced fatigue-related incidents by 90 percent at a Nevada site trial.

Advantages of the DSS include its ease of use, in that it does not require calibration; the driver does not need any special equipment, and simply gets behind the wheel, unimpeded. The DSS system works if an operator wears tinted safety glasses or prescription eyewear.

More information: www.seeingmachines.com/product/dss/

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