

PRODUCT INFORMATION



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## **NEXUS**

OPERATOR FATIGUE AND  
DISTRACTED DRIVING MONITOR

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Operator assistance and collision avoidance systems

# OPERATOR FATIGUE MONITORING SYSTEM



## Overview

**NEXUS is an advanced Fatigue and Distracted driving monitoring and management system. Designed for industrial applications to improve safety sites.**

Monitoring operator fatigue and distraction allows mining and industrial operators to be more safe and productive by reducing fatigue or distracted operator related incidents dotNetix is concerned with machines in 'mission critical' applications, where accidents are unacceptable and where safety can be enhanced through monitoring of the human operator or driver who is ultimately responsible. Audible alerts are created for the driver while real time remote alerts can be analysed for fatigued or distracted operators.

Nexus' infrared camera continuously monitors the operator for eyelid closure facial and head movements, and other unsafe behaviour while the vehicle is in motion.

### Upon event detection:

- In cab alarms are activated (speaker and/or seat vibrator)
- An event is created and stored locally on the Nexus Computer
- Event data and clipped photos are synchronised with Nexus Integrated with Clearview



**Supervisor Alerts**



**Operator Alerts**



**Office Alerts**



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## Technology



**NEXUS** is a camera based operator and driver fatigue status monitoring device.

Using advanced machine learning algorithms to monitor the state of the operator's face the system is able to predict a state of fatigue.

The system is equipped with infrared LED technology that enables both day and night. Being sensitive in the Infrared optical band allows robust functionality through glasses and various faces.

The incidents are recorded locally on the camera by a standard SD Card. During a fatigue event, the system sends an real time image snapshot to Clearview that enables immediate action.

The system supports both standard GSM networks or Wi Fi.

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## Benefits

**AMS**  
ADVANCED MAPPING SOLUTIONS



Increases operator productivity



Reduction in incidents and accidents



Increases operator awareness, reducing fatigue related hazardous behaviour for a safer mine environment



Increases equipment availability



Reduces direct and indirect operating costs

**Operators** are immediately aware when they have become susceptible to a fatigue or distraction event through the Nexus system. Upon hearing the audible alarm or sensing the **seat vibrator** the operator is able to take the appropriate action to regain control of their equipment and senses.

# OPERATOR FATIGUE MONITORING SYSTEM



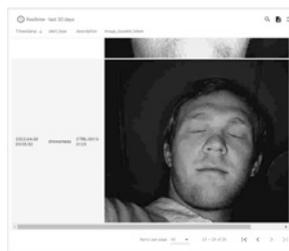
## CLEARVIEW - REMOTE MONITORING



DotNetix's web based **Clearview** solutions shows the individual fatigue levels for each active equipment operator. Additionally, designated supervisors and managers have the option to receive customised alerts via email when an operator experiences a critical fatigue or distraction related event.

Time	Operator	Type	Status	Resolution
2022-05-06 11:17:02	K24813-Dw	Driver Fatigue	Critical	Unacknowledged
2022-05-06 11:18:56	K24813-Dw	Driver Fatigue	Critical	Unacknowledged
2022-05-06 11:20:09	K24813-Dw	Driver Fatigue	Critical	Unacknowledged
2022-05-06 11:22:19	K24813-Dw	Driver Fatigue	Critical	Unacknowledged
2022-05-06 11:23:08	K24813-Dw	Driver Fatigue	Critical	Unacknowledged
2022-05-06 11:27:48	K24813-Dw	Driver Fatigue	Critical	Unacknowledged

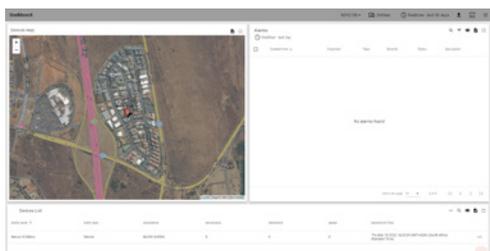
▲ Alarms Table



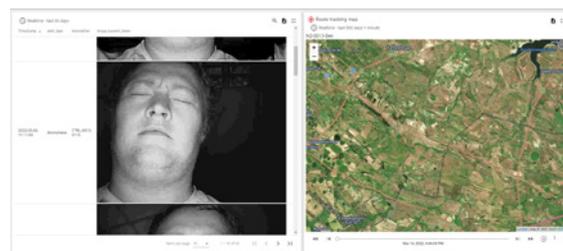
▲ Event Photos

Time	Awareness	Distraction	Smoking	Speed	Swerving	Phone	Mask	Driver Absence	Camera	Trucked
2022-05-06 11:17:02	0	0	0	0	0	0	0	0	0	0
2022-05-06 11:17:52	1	0	0	0	0	0	0	0	0	0
2022-05-06 11:17:34	0	0	0	0	0	0	0	0	0	0
2022-05-06 11:17:33	0	1	0	0	0	0	0	0	0	0
2022-05-06 11:18:21	0	0	0	0	0	0	0	0	0	1
2022-05-06 11:18:09	0	0	0	0	0	0	0	0	0	0
2022-05-06 11:11:03	0	0	0	0	0	0	0	0	0	1

▲ Event Log



▲ Dashboard - Device Group Layout



▲ Dashboard - Device Specific Layout



▲ Dashboard - Device Specific Layout

Device ID	Operator	Resolution	Status	Location/Time
Device 01	None	None	Active	Site Area 1

▲ Device Lists



▲ Devices Map

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## Specifications

**AMS**  
ADVANCED MAPPING SOLUTIONS

<b>Features</b>	
Sleep/Fatigue Detection	
Distracted Driving Detection	
Yawn Detection	
Cell Phone usage detection	
Smoking Detection	
Local DVR (Removable SD CARD)	
<b>Power</b>	
12VDC/24VDC	2 Ampere
<b>Environment</b>	
Temperature	-20 to 70 C
Operation	Dust, Day, Night
<b>Enclosure</b>	IP50
<b>Warning</b>	Audible and Vibration Unit
<b>Detection Range</b>	0.65 to 1.1 meter
<b>GPS</b>	Built in (For surface applications)
<b>Image capture</b>	Yes through Clearview
<b>Connection</b>	M12 Ethernet

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## Clearview Remote Monitoring Features

**AMS**  
ADVANCED MAPPING SOLUTIONS

Remote monitoring Features	Clearview
Real time monitoring	Sleep, Distraction, Yawn, Cell usage, Smoking
Alert Image capture	Yes
Maps and tracking	Yes (Surface only)
Speed	Yes (Surface only)
Time based Heatmaps	Optional

# OPERATOR FATIGUE MONITORING SYSTEM

## ORDERING

### Nexus Fatigue Sensor



**Nexus Fatigue  
Sensor Required**

### Controller with built-in Wifi



**Wifi Interface  
Optional 3G/4G  
Required**

### Cable

**1-20 Meter**

### Seat Vibration Unit



**Optional**

## CONTACT

### Address

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78979878978

2564	5468	8949	8727	5684
46660	4546680	244	5484	5484
45465	4421113	4313	43131	4313