AG TECH

TECHNICAL SOLUTIONS

ANTI-FATIGUE

www.ag-tech.kz

AG TECH
TECHNICAL SOLUTIONS

About us

AG TECH is a qualified supplier of innovative software and hardware in the fields of IT, factory automation and business analytics.

AG TECH LLP in collaboration with Siberian Federal University (Krasnoyarsk) have developed a hardware and software system to determine the fatigue of drivers and operators of machinery designed to work in the conditions of mining production "Anti Fatigue".

At present, the innovative system "Anti Fatigue, based on the principle of recording the galvanic skin reaction of a person, has been successfully tested at the Maleyevsky mine of Kazzinc LLP, where it was used to analyse the fatigue of vehicle drivers as well as operators responsible for the lowering and lifting of mine personnel.

www.ag-tech.kz

KAZZINC

ANTI-FATIGUE

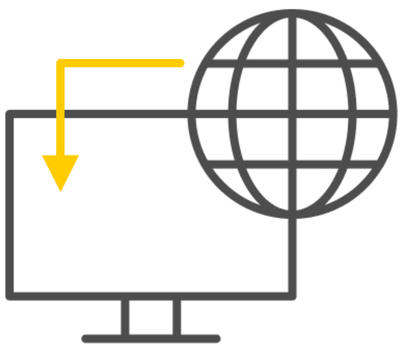
The performance maintenance system

The **Anti-Fatigue system** is designed to operate on shunting locomotives used in both shunting and other shunting and other modes of operation on sections of railways with independent and electric DC and AC traction. It functions in conjunction with the Smart bracket.

Capabilities of system

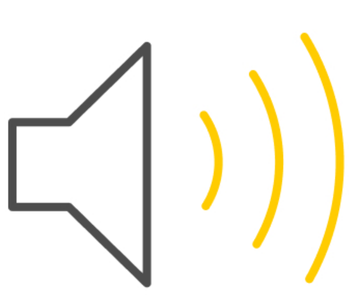
Condition monitoring, fatigue tracking

Train geolocation



Transmission of data to the system

Triggering of traffic light signals



Triggering of audible alarms

On-the-fly detection of alcohol vapours on the driver

System composition

Smart wristband - a telemetry sensor placed on the driver's wrist, designed to receive information on the relative change in electrical resistance of the skin and transmit it digitally via radio to a receiver.

The smart bracelet signal receiver is designed for the reception and primary processing of information,
The smart bracelet signal receiver is designed to receive and process information transmitted by radio from the telemetry sensor and transmit it to the system controller.

System controller, designed to receive and process information from the receiver and to control the voltage supply circuit to the electropneumatic valve.

Display units, designed to display signals visually:

- radio channel operation - yellow
- prealarms - yellow
- the performance acknowledgement request - red

The system's operating algorithm includes the following functions

- Continuous monitoring of the driver's working condition by measuring the electrical resistance of the skin.
- Light indication of operating modes (on two remote displays located in two working areas of the machine operator).
- Receive and process the signal from the special Vigilance Handle

Technical specifications

- The system provides continuous monitoring of the driver's performance.
- The system is designed as a wristband.
- Fatigue monitoring is provided by the human galvanic skin response (SRG) parameters.
- Data can be exchanged via uplink-downlink via wireless networks
- Wi-Fi, LTE, IIoT or LoRaWAN.
- Employee vigilance alarm.
- The system provides automatic saving of log files and their storage for up to 3 months.

Performance requirements

- The smart bracelet's operating time without recharging at least 24 hours.
- Operation time of the SRG wirelessly without recharging is at least 24 hours.
- The warranty period for the system is 1 year.

Functional technical characteristics of the system

- The indication and signalling functions can either be done as a separate unit or integrated into the UVZI with a separate function key to confirm the driver's vigilance.

- The Anti-Fatigue system is integrated with the Smart Bracelet via wireless interfaces.

- If the physiological GSR parameters require confirmation of operability and the employee does not confirm their operability within at least 3 seconds, by pre-alarm light by a bright indication on the UVZI display, the audible alarm is activated.

AG TECH
TECHNICAL SOLUTIONS

www.ag-tech.kz

info@ag-tech.kz

+7 (7172) 47-28-46