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Driver Fatigue Monitoring AI Face Access System

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About Us

SR Vision Enterprises delivers DGMS-compliant, technology-driven safety solutions for mining, construction, ports, and warehouses—enhancing safety, efficiency, and operational excellence even in extreme environments.

Our Vision

To deliver maximum customer value through reliable and innovative safety solutions.

Our Mision

To lead in futuristic safety products that set new benchmarks in protection and performance.

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About Product

The Driver Fatigue Monitoring AI Face Access System is a professional, AI-enabled safety and access control solution designed for HEMM vehicles and warehousing operations. The system uses high-speed facial recognition technology to ensure that only authorised, trained, and certified operators can start and operate vehicles, thereby preventing unauthorised use and enhancing operational safety.

Developed by **SR Vision Enterprises**, the system supports compliance with industrial and mining safety standards while improving workforce discipline and equipment protection. It combines driver authentication with fatigue monitoring to reduce accident risks and improve overall site safety.

Built for demanding industrial environments, the system features a rugged **IP67-rated, waterproof and vandal-proof cast-aluminium housing**. A powerful AI chip with **1T NPU computing capability** enables fast and accurate face recognition, even in low-light conditions. The **10-second cold start** ensures quick system readiness after power-up.

With support for **12V–110V wide-range power input**, built-in **Wi-Fi, 4G, GPS/ positioning**, and **up to 512GB onboard storage**, the system delivers reliable connectivity, monitoring, and data security. It is an ideal safety and access solution for mining, construction, manufacturing, and logistics operations.

Key Highlights

- **Fast & Accurate Facial Recognition:** Allows vehicle access only to authorised drivers, preventing misuse, shift violations, and unauthorised operation.
- **Real-Time Start/Stop Control:** Integrated with relay and seat belt sensors to ensure safety conditions are met before equipment operation.
- **AI-Based Behaviour Monitoring (Optional):** Detects driver fatigue, distraction, smoking, mobile phone usage, helmet compliance, and other unsafe behaviours.
- **Industrial-Grade Construction:** IP67-rated waterproof and dust-proof housing with 2-meter drop resistance, designed for rugged industrial and warehouse environments.
- **Rapid 10-Second Cold Start:** Quick boot technology ensures minimal downtime and immediate operational readiness.
- **Advanced Connectivity:** Built-in 4G, Wi-Fi, and GPS for real-time monitoring, tracking, and data reporting.
- **Voice Alerts & Audio Support:** Integrated speaker and microphone provide real-time voice warnings and audio event recording.
- **Secure Anti-Tamper Design:** Protects SIM, TF card, and internal connectors against damage and unauthorised access.
- **Wide Operating Temperature Range:** Reliable performance from –30°C to +70°C with stable EMC operation in high-interference industrial environments.

Technical Description

- **Housing:** Cast aluminium enclosure; IP67-rated waterproof and vandal-proof; 2m drop resistance.
- **Operating Temperature:** –30°C to +70°C
- **Power Input:** 12V–110V wide voltage range with reverse, overload, and overcurrent protection.
- **Processing Unit:** High-performance AI chip with 1T NPU computing power.
- **Cold Start Time:** Less than 10 seconds.
- **Night Vision:** Integrated IR illumination for dark and low-light environments.
- **Connectivity:** 4G full-network support, Wi-Fi, GPS / Galileo positioning.
- **Audio:** Built-in speaker and high-sensitivity microphone for voice alerts and audio recording.
- **I/O Interfaces:** Seat belt sensor input, ignition relay output, start/stop control support.
- **Storage:** TF card supports up to 512 GB (hot-swappable).
- **Status Indicators:** Five LED indicators (Wi-Fi, REC, 4G, GPS, Power).
- **Installation:** Universal mounting bracket for A-pillar or B-pillar with anti-vibration support.

System Working Process

➢ **Operator Approaches Machine:**

The AI camera instantly scans and detects the operator's face.

➢ **Face Authentication:**

The system compares the detected face with stored authorised operator records.

➢ **Access Granted:**

Upon successful verification, forklift power is enabled and the system displays *"Face Authorisation Successful"*.

➢ **Access Denied:**

If the operator is unauthorised, Vehicle start is blocked and an alert is triggered.

Key Benefits

- **Prevents untrained or unauthorised operators from using Vehicle**

- **Enhances warehouse and factory safety while ensuring compliance with safety protocols and shift controls**

- **Reduces accidents caused by operator error or negligence**

- **Minimises equipment misuse and human errors**

- **Provides video and data records for audits, investigations, and safety reviews**