



**FLEET PREDICT**

WEARABLE FATIGUE TECH

CASE STUDY

# FLEETPREDICT: REAL WORLD RESULTS

## THE POWER OF FATIGUE PREDICTION: FLEETPREDICT'S IMPLEMENTATION IN EUROPEAN TRANSPORT FLEETS

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Garmin & SAT at FleetPREDICT Program Kick-off Event in Milan 2025

## Ensuring Driver Safety with Fatigue Detection Technology

FlixBus, Star Mobility, Airpullmann, and Wayla are leading bus and transport companies operating across Europe, who provide extensive intercity and regional service daily.

A shared priority among these companies is ensuring driver and passenger safety through the adoption of advanced technologies. Within the transport and logistics sector, drivers are required to maintain sustained attentiveness while driving during long operating periods.

Recognising this challenge, FlixBus, Star Mobility, Airpullmann, and Wayla joined an innovative safety initiative launched in Milan, designed to enhance driver wellbeing and operational safety through real-time fatigue monitoring.

## The Program

The innovative Milan-based program utilises FleetPREDICT, a safety technology developed in partnership by Sleep Advice Technologies (SAT) and WHG Technologies (WHG). FleetPREDICT combines Garmin smart wearables with biometric data to proactively identify fatigue risks.

*FleetPREDICT uses patented algorithms to monitor fatigue and predict drowsiness in real time, without invasive cameras.*

In this program, smart wearable devices were deployed across the four companies. Data from these devices was analysed and visualised through FleetPREDICT dashboards, providing detailed insights into biometric trends, fatigue performance, and fatigue alarm frequency during driving periods.

To date, the program has captured nearly 2,250 hours of driving data, covering approximately 130,000 km.

The data visualisation (as shown in Figure 1) illustrates how fatigue and attention levels fluctuate throughout the day:

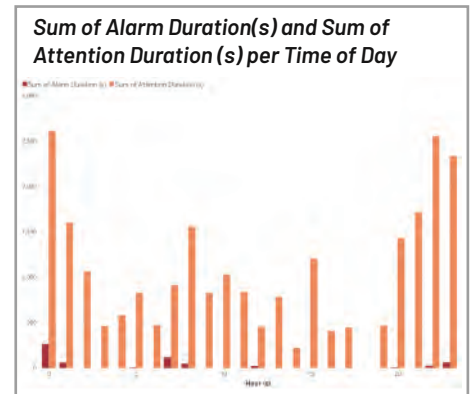


Figure 1. Distribution of Alarm & Attention Durations by Time of Day

## Data Key Findings

### Early morning (00:00-02:00) & Late evening (20:00-23:00) :

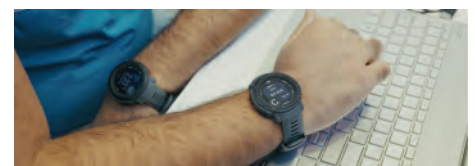
Show peak variations in attention levels (1,400-2,600), accompanied by fatigue alarms. This shows increased drowsiness during circadian low points.

### Daytime hours:

Maintain stable attention levels (800-1,300 seconds) and reduced alarm frequency. This indicates consistent focus and performance.

### Afternoon periods (around 14:00-16:00):

Show moderate increases in alarms, aligning with typical post-lunch fatigue tendencies.



Although some periods showed higher levels of attention, fatigue warnings occur more frequently and last longer. This highlights the necessity and effectiveness of implementing FleetPREDICT, particularly during the night and early morning.

The findings demonstrate how the system transforms fatigue management from a reactive process into a proactive, data-informed safety strategy.



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## Major Program Outcomes

After the Milan-based program, the data derived from FleetPREDICT highlights the value of predictive fatigue monitoring across fleet operations.

Major prospective outcomes include for drivers and fleet operators include:



**Improved Risk Prevention & Visibility Through Real-Time Fatigue Analytics**



**Increased Driver, Passenger & Operator Safety Through Data-Informed Scheduling**



**Targeted Improvements & Driver Training Based on Fatigue Trend Analysis**

**“ The system is activated only when the vehicle is in motion and sends early alerts in case of fatigue, helping driving professionals to remain alert & safe. ”**

-Garmin Italy

Through close collaboration between WHG, SAT and Garmin, FleetPREDICT has proven to enhance driver wellbeing, passenger safety, and fleet efficiency.

This initiative marks a significant step forward in using predictive analytics to build a safer and more sustainable mobility ecosystem.

**“ We are moving forward toward safer, more sustainable, and more innovative mobility! ”**

-Mario Ferretti, Co-Founder of Wayla



## About FleetPREDICT

FleetPREDICT is a predictive driver safety and fatigue management technology developed by WHG Technologies and SAT.

Using Garmin wearables and objective science based algorithms, it delivers early-warning alerts before fatigue or impairment leads to risk.



## About SAT

Sleep Advice Technologies (SAT) is an innovative research company based in Turin, Italy, specialising in patented technology that detects and predicts transitions between wakefulness, drowsiness, and sleep using smart wearables.

SAT's flagship algorithm, PREDICTS, has been validated through medical science and international studies. It is used in applications spanning transport safety, insurance, and digital health.

In 2023, SAT was awarded the top prize at the Garmin Health Summit in the Insurance & Employee Health category.



## About WHG

WHG Technologies is a leading technology provider specialising in connected mobility, IoT, and safety innovation. With more than 35 years of experience, WHG delivers end-to-end enterprise solutions covering hardware design, firmware, software development, manufacturing, and implementation. The company connects over 45,000 devices monthly across transport, logistics, and enterprise sectors.

Certified by Transport Certification Australia (TCA), WHG provides trusted telematics and compliance solutions while also advancing new frontiers in AI-powered wearables, predictive analytics, and integrated safety platforms. WHG's vision is to make the adoption of technology easier and more cost-effective across all markets, supporting fleets, OEMs, and industry partners worldwide.

Visit the WHG website to learn more: [whg-telematics.com](http://whg-telematics.com)



Contact WHG today to find the right solution for your business.

Call 1800 474 387 or email [sales@whgsolutions.team](mailto:sales@whgsolutions.team)



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