



Monitoring Devices for Overall **Fit**ness of **Drive**rs

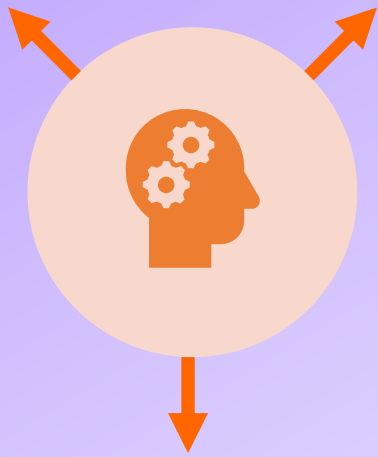
The **FitDrive** project meets the EU Driving Licence Directive

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953432

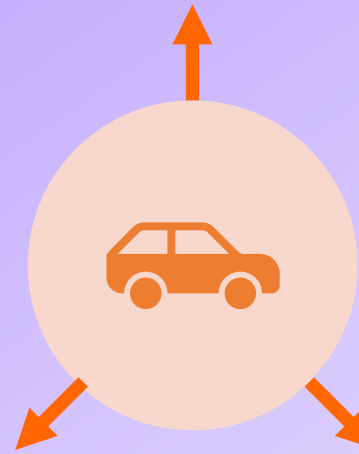
Professional drivers



Identify & prevent impaired driver states

AI techniques

Driving tests simulator & road
Literature



'Usual' daily driving style

Personal profile per driver

UNUSUAL BEHAVIOUR

Continuous screening of psychophysical capabilities and vehicular parameters to detect the **onset** of fatigue or altered behaviour, **not yet apparent to the subject**

The FitDrive system will **continuously** learn and **improve the detection** of anomalies

The logo for Fit Drive, featuring a stylized heart icon and the text "Fit Drive" in a bold, sans-serif font.

FitDrive Status & Preliminary results

Induced fatigue successfully

Correlate with params from non-invasive sensors

Literature

Promising features detected



Next:

- 1 month personalisation
- Unusual behaviour detection

** research in progress * - 2025*

FitDrive aligns with the DLD...



- FitDrive supports the DLD objectives in lowering incidents caused by **reduced fitness** and **dangerous behaviour**

COM(2023) 127 final

- Pave the way for new **assistance mechanisms**, continuous **fitness-to-drive** monitoring

on driving licen THE EUROPEAN PARL

- **Recommendations** to public administrations, transport sector and automotive industry, researchers:

1: Standardisation needed on acceptable levels of fitness

(2023) 350 final; - {SWD(2023) 128 final} - {SWD(2023) (Text with EEA relevance)

Standardisation (1)

When to warn drivers on lowered fitness to drive?

Common criteria needed:
Cases of drowsiness/fatigue,
medication use, etc.

Similar as with alcohol limits,
preferably on EU level.

source:
etsc.eu

	Standard	Commercial	Novice		Standard	Commercial	Novice
Austria	0.5	0.1	0.1	Latvia	0.5	0.5	0.2
Belgium	0.5	0.2	0.5	Lithuania	0.4	0.0	0.0
Bulgaria	0.5	0.5	0.5	Luxembourg	0.5	0.2	0.2
Croatia	0.5	0.0	0.0	Malta	0.5	0.2	0.2
Cyprus	0.5	0.2	0.2	Netherlands	0.5	0.5	0.2
Czech Rep.	0.0	0.0	0.0	Norway	0.2	0.2	0.2
Denmark	0.5	0.5	0.5	Poland	0.2	0.2	0.2
Estonia	0.2	0.2	0.2	Portugal	0.5	0.2	0.2
Finland	0.5	0.5	0.5	Romania	0.0	0.0	0.0
France	0.5	0.5	0.2	Slovakia	0.0	0.0	0.0
Germany	0.5	0.0	0.0	Slovenia	0.5	0.0	0.0
Greece	0.5	0.2	0.2	Spain	0.5	0.3	0.3
Hungary	0.0	0.0	0.0	Sweden	0.2	0.2	0.2
Ireland	0.5	0.2	0.2	UK	0.8	0.8	0.8
Italy	0.5	0.0	0.0	Switzerland	0.5	0.1	0.1

Standardisation (2)

In SAE3 autonomous vehicles, the FitDrive system can check the driver's fitness before passing over control.

Standards should define at what level of fitness it is safe (or not) to pass over control.

SAE
INTERNATIONAL

**SAE
LEVEL 3™**

When the feature
requests,
you must drive

Standardisation (3)

The FitDrive system can connect to police roadside controls and warn on unusual behaviour, helping to target the controls.

This contributes to making these controls more effective and reduce stationary time of vehicles.

Again, European standards on fitness level thresholds are needed, possibly related to ITS standards.



- Offices in Burgos & Madrid
- 86 colleagues (at least...)
- Founded 1989

- For FitDrive:
 - Simulation Technologies & Virtual Reality
 - TTO



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Thank you!

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FitDrive Project



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