



WingDriver™

WingDriver helps drivers to reduce crashes, with next-level Computer vision and AI designed for smartphones!

Supported by:



INCEPTION
PROGRAM

PLUGANDPLAY

Problem

94%

of accidents

are human-caused

World Health Organization

1.3M

people are killed

every year due to driver

error

2841 people killed by **distracted** driving (only in 2018 in USA)

775 people killed by **drowsy** driving (only in 2018 in USA)



The Timing is Now!

New Vehicle Mandates Coming



European commission approved new safety regulations, mandating automakers to install advanced safety systems, **including drowsy and distracted driver detection**, in all new cars in the EU market. The mandate will start in 2022 with certain autonomous cars and by 2026 be mandatory in all new vehicles.

It takes about 20 years for new cars to make up 90% of the market!

What happens in the aftermarket until then?



U.S. Congress passed the Moving Forward Act – a 1.5 trillion-dollar infrastructure bill committed to making roads safer. One of the safety measures included in the bill is to make installation of **technology that detects inattentive or intoxicated driving** required in newly produced vehicles.

New usage-based insurance

Usage-based insurance (UBI), also known as **pay as you drive (PAYD)**, **pay how you drive (PHYD)** and mile-based auto insurance, differs from traditional insurance, which attempts to differentiate and reward "safe" drivers, giving them lower premiums and/or a no-claims bonus.



Solution



WingDriver is the aftermarket solution!

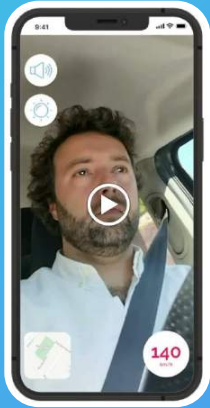
WingDriver is developing technology to enable any smartphone to alert the driver of dangerous behaviors (distraction, drowsiness, stress, aggressiveness, etc) and for dangerous driving situations around the vehicle (lane keeping, brake assist, road analysis, etc).

WingDriver uses advanced AI technology in machine learning and machine vision to develop superior facial analysis and vehicle maneuvering integration based on the team's previous experience in developing driver monitoring solutions for top automotive Tier 1 Bosch.



WingDriver has a 3-tiered approach

All based on the same mobile phone tech



**WingDriver
App**

Basic functionality a free app for *every* driver, generating data to continually improve our SDK!



**WingDriver
SDK**

Enable navigation, insurance and telematics suppliers to embed WingDriver's tech in their Apps!



**WingDriver
Cloud**

Collect valuable road data in our cloud to improve our tech and to sell for insurance, road authorities, etc.



Promoting safety

WingDriver tech allows for an assessment of each driver's behavior based on three main data sources:

Driver analysis

Distraction warnings, pre-sleep warnings, fatigue levels, stress levels, emotional states, ...

Vehicle analysis

Speeding, aggressive braking, aggressive turning, unsafe following, forward collision warnings, lane deviation, ...

Telematics

Localization, distance travelled, velocity, ...



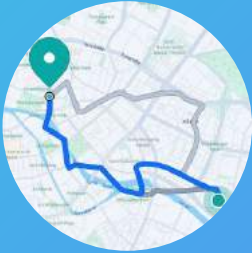
Key Markets

Besides the consumer in his private vehicle



Auto Insurance

Auto insurance companies are moving aggressively to basing their rates not on gender, age and location but instead on the actual risk assigned to each driver based on their driving performance.



Navigation companies

Tech companies developing navigation and mapping products, will naturally add innovative features to keep the user engaged. Driver and vehicle monitoring tech is one of the best features for the drivers.



Telematic companies

Telematic companies deploying technology such as dash cams in commercial vehicle fleets, to improve driver safety and performance. Driver and vehicle monitoring is their next application.



Key Differentiation

Besides the aftermarket smartphone based approach

No hardware - Product developed to take advantage of the smartphone sensors alone.

Auto calibration and smooth installation support - allow the user to install the device without the need of a professional.

Algorithms developed specifically - to run on the device and in real-time, to work in night conditions, to work with sunglasses, etc.

White Labelling - iOS and Android apps developed in a way that enables a quick change on the visuals to fit our client needs. Facilitating proof of concept activities.

SDK - Technology build in C++ allowing for a quick deployment of the algorithms in mobile and embedded platforms.

Cloud - built with 2 objectives, collect data to improve AI tech and to sell data for many different market verticals (Insurance, government authorities, health, etc).

VTTI tech - At the core of WingDriver's technology is a deterministic/machine-learning algorithm developed by three highly accomplished U.S. sleep researchers working in the field of transportation safety.



Key Benefits



Protect drivers



Driver-centric coaching



Prevent collisions



Innovative risk segmentation



Real-time in-cab alerts



Reduce operational costs

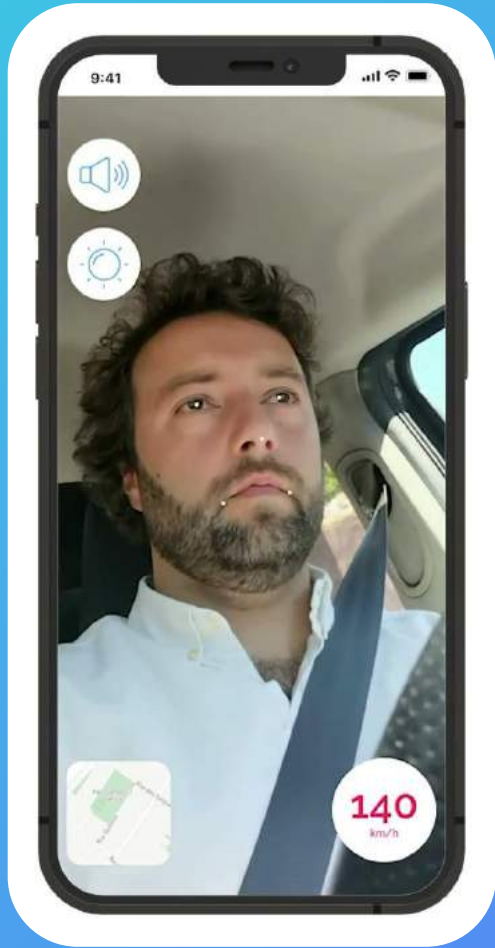


Improve driver behaviour



Keep customers engaged





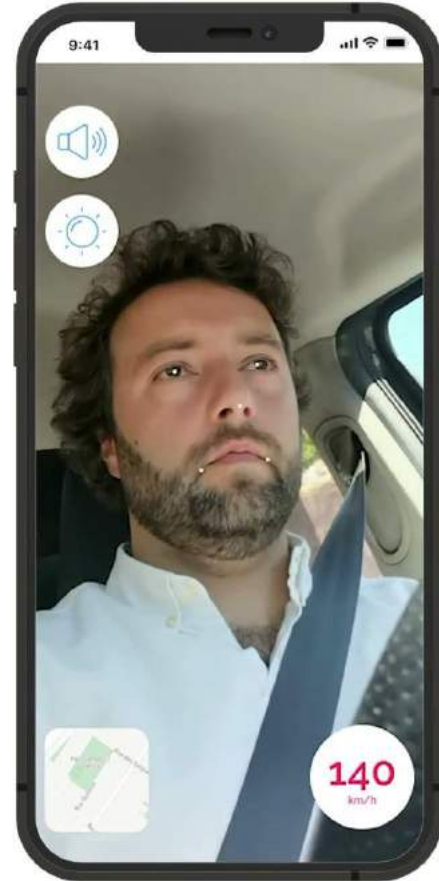
WingDriver

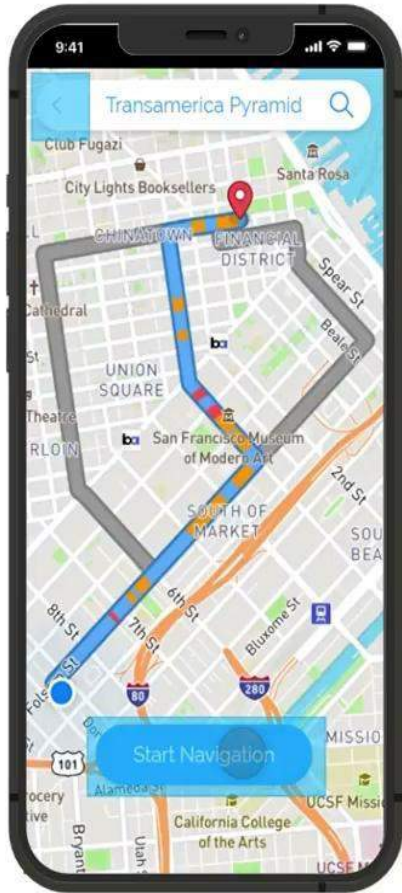
Mobile app



Real time monitoring

As soon as the user starts driving, our technology will monitor the driver, the vehicle and his surroundings, making driving even more safe!





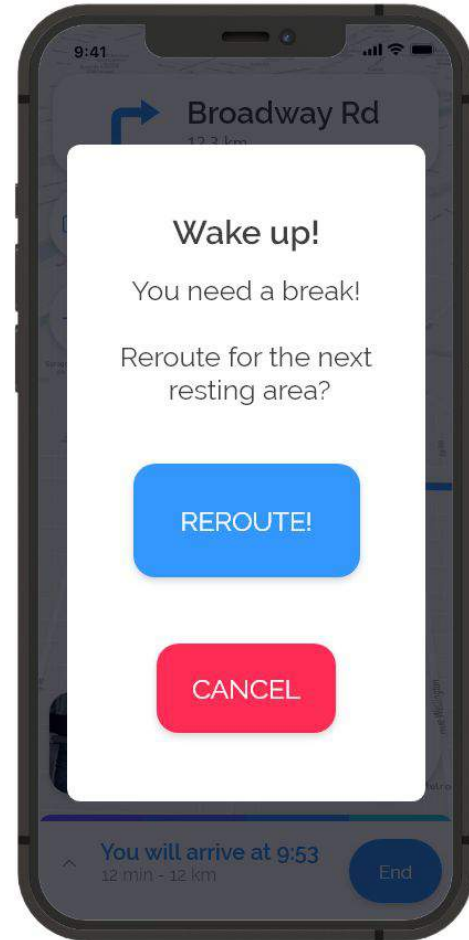
Real time navigation!

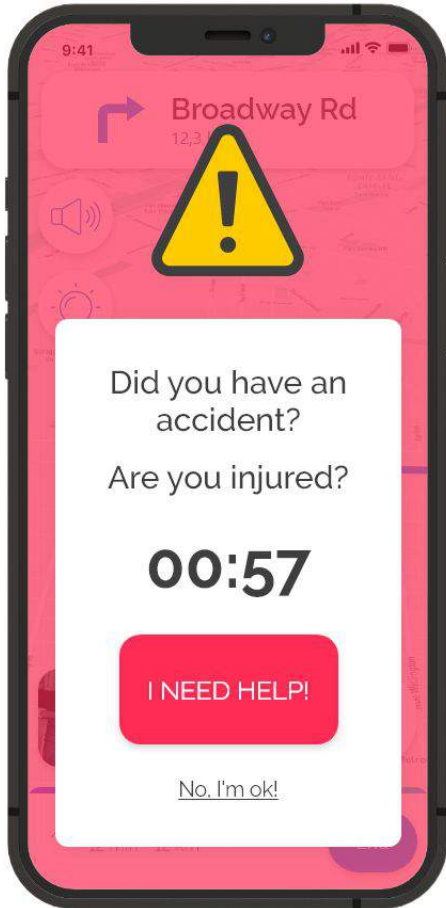
WingDriver app has typical road navigation features, so wherever you're going, we will help you get there safely!



Wake up the driver

Our driver monitoring technology monitors the facial behaviour of the driver and if she falls asleep, the app generates audio and visual alerts to wake him up.





Saving lives detecting crashes

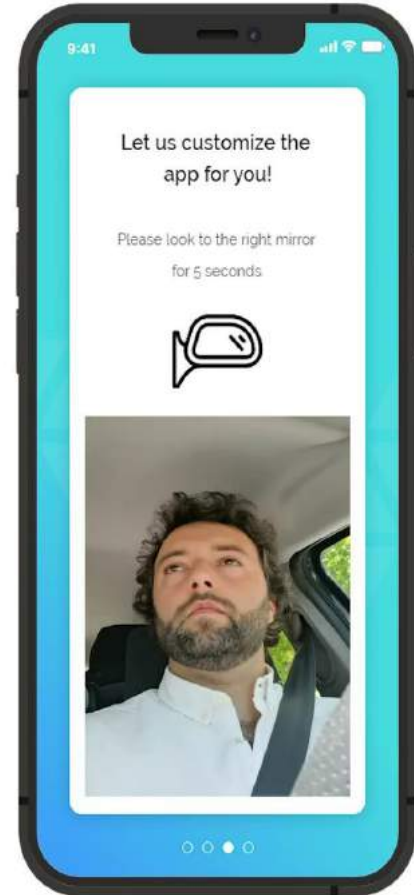
The app features the detection of likely crashes. If necessary it will automatically send messages or call driver emergency contacts to request help.

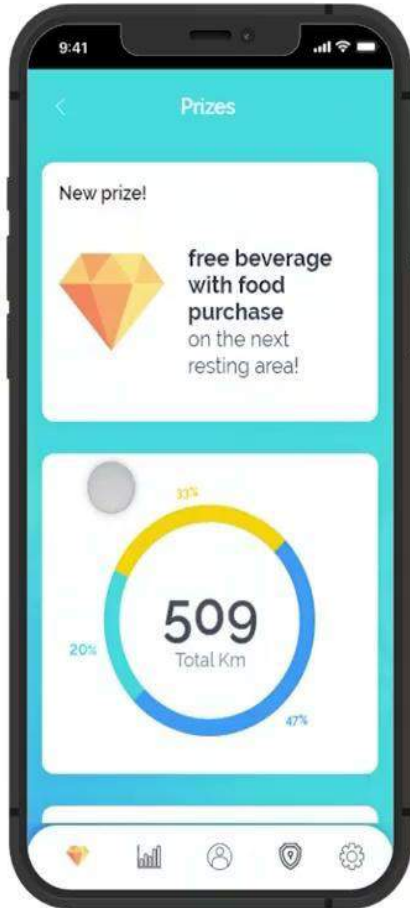


Smooth installation

Our app will be able to support the driver when installing the smartphone for adequate viewing angles.

Then it will customize the app for each driver characteristic to achieve the highest levels of performance!





Driver performance

Using accelerometer information, our app is able to detect hard braking, excessive acceleration, and harsh maneuvers.

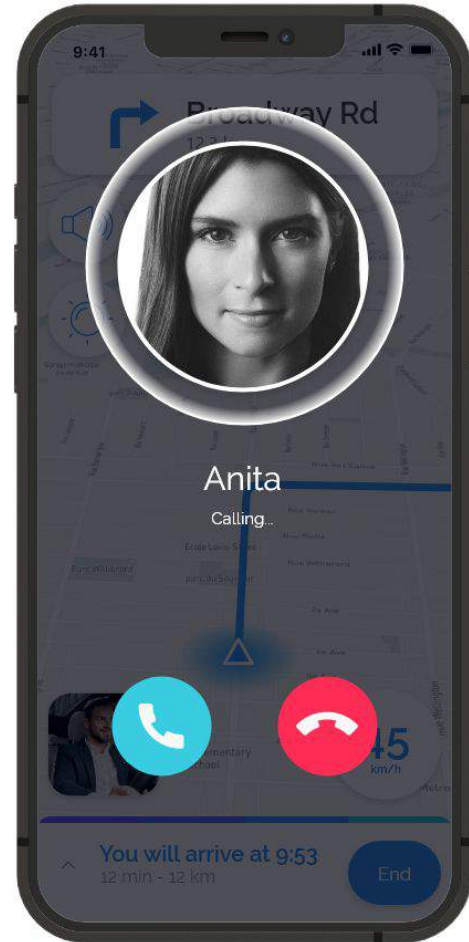
This kinematic risky driving evaluation, is super relevant to support driver performance improvement.

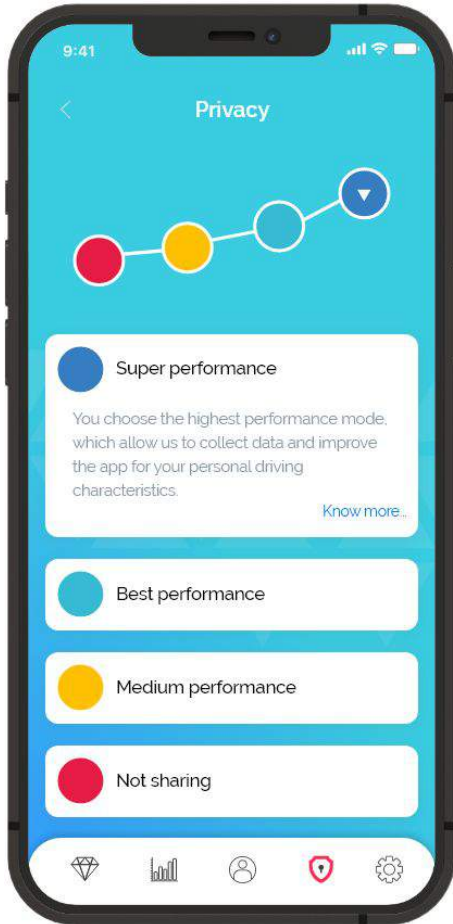


Buddie calls

Talking is one of the best actions that the driver can take to mitigate fatigue.

We allow the driver to call other WingDriver users or his own contacts and parents or dispatchers calling the driver to see why their driving is becoming erratic.





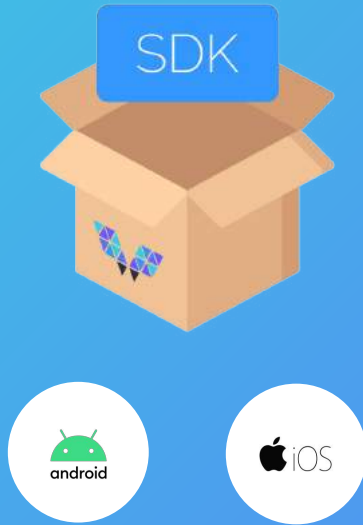
Privacy modes

Privacy is important to us. Our consumers will opt in to desired services and data sharing options.



WingDriver SDK

WingDriver SDK will allow any business to quickly add driver and vehicle surrounding monitoring features to their mobile driver support apps!



This is a highly leveraged path to growth.



WingDriver **SDK** will address many critical functions



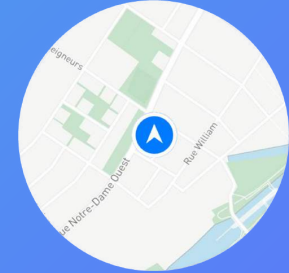
Driver analysis

- Pre-sleep detection
- Fatigue level detection
- Distraction detection
- Actions detection
- Emotions detection
- Stress level detection
- Age, gender and race detection
- Face recognition



Vehicle analysis

- Crash Detection
- Forward collision warning
- Hard braking detection
- Hard acceleration detection
- Aggressive turning
- Unsafe following (tailgating)
- Lane deviation
- Pavement analysis

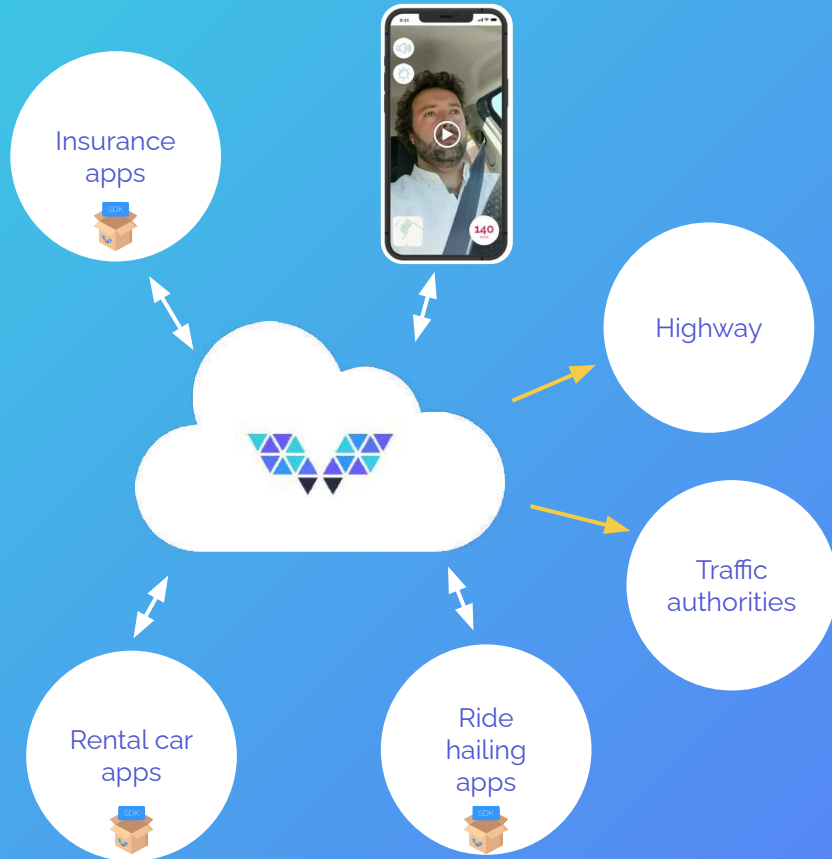


Telematics

- Velocity
- Speeding
- Localization
- Travelled distance
- Travelled route
- ...



WingDriver **Cloud** data will be valuable to customers



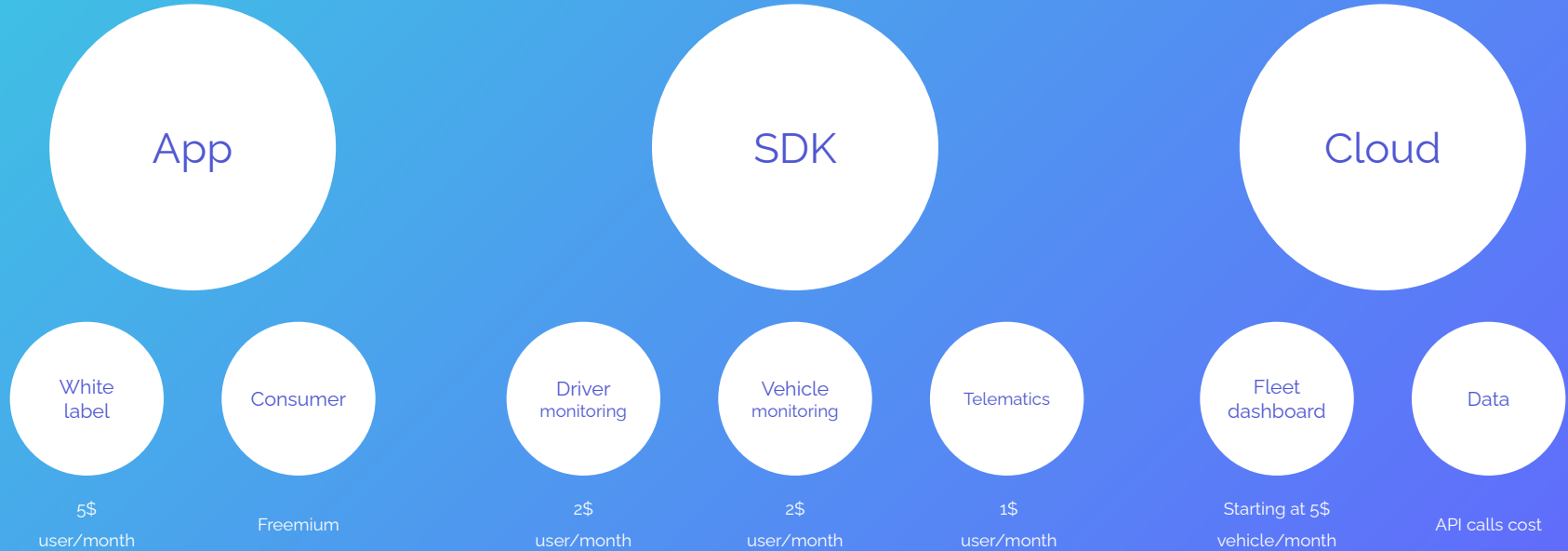
WingDriver cloud will collect data from all WingDriver App and WingDriver SDK users!

Collecting naturalistic data allows us to continuously innovative and improve our AI tech!

The data collected has unique characteristics enabling businesses to improve their operations!



Revenue streams



Go-to-market

1 Show market potential

1. Build app and fleet dashboard
2. Pilots to learn, collect data and track our benefits
3. Improve App and SDK algorithms for driver analysis and telematics.

2 Grow with partners (B2B2C)

1. Sell SDK for Navigation and Telematic companies
2. Sell SDK and White label app to Insurance companies (usage-based products)
3. SDK and App with new vehicle analysis features.

3 Go for road safety

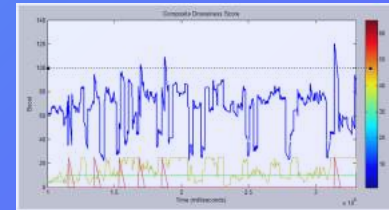
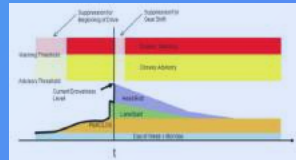
1. Sell Data for risk segmentation empowering insurance companies to use causal and controllable variables in their auto insurance pricing.



Research based tech



At the core of WingDriver's technology is a deterministic/machine-learning algorithm developed by three highly accomplished U.S. sleep researchers working in the field of transportation safety. This proprietary algorithm, obtained through an exclusive license agreement, will provide a scientific knowledge-based foundation to the data-enabled evolution of WingDriver's AI software.



Competition



DMS tech

DMS tech companies, are our biggest indirect competitors. Each vehicle has his own hardware and software solution installed on the dashboard, to enable the highest levels of accuracy.



Aftermarket DMS

Our competitors with Driver monitoring systems (DMS), use their own hardware and software, making their shift to iOS and Android expensive/difficult.

But to date none of these competitors has offered a smartphone solution!



Team



André Azevedo - CEO - Electric Engineering that already founded 3 companies and have high expertise in company management and growth, specially in mobility tech startups, due to his previous company (HealthyRoad), and due to other corporate tech management positions.

<https://www.linkedin.com/in/andregoncaloazevedo/>



Rui Monteiro - CTO - Masters in Electronics and Computer Engineering, with high experience in building camera-based in-vehicle sensing solutions for autonomous vehicles at Bosch innovation. Passionate about automotive, computer vision and deep learning.

<https://www.linkedin.com/in/rui-monteiro-6371271b2/>



Filipe Monteiro - Advisor - Experienced developer and founder. Previously built systems from the ground up until production, namely using Computer Vision and AI. Founded 3 companies, one of which, HealthyRoad, that used Deep Learning technology in the Automotive area.

<https://www.linkedin.com/in/filipedemonteiro/>



Michael O'Shea - Investor- Dynamic leader and entrepreneur with proven success in leading technical innovation for public and private organizations. Leverages a keen understanding of technology to develop and launch innovative products.

<https://www.linkedin.com/in/michael-o-shea-19b490/>



Team



Melissa Hulse - Investor - Was leader of several research groups at the Virginia Tech Transportation Institute (VTTI), is regularly tasked with the development, organization, implementation, and overall management of transportation safety-related research projects.



Tom Dingus - Investor - As director was responsible for managing the operations and research at the Virginia Tech Transportation Institute, which conducts more than \$43 million in sponsored research and general center administration for nearly 400 employees and students.

<https://www.linkedin.com/in/tom-dingus-8aa2583a/>



Bob Denaro - Investor - Consultant in ITS and Advisor to Motus Ventures in Silicon Valley. Pioneer in ADAS and the use of digital maps in ADAS applications. Delivered first telematics systems to GM Onstar and others. Senior executive positions at Motorola, HERE, Trimble and others.

<https://www.linkedin.com/in/bob-denaro-71732a1/>

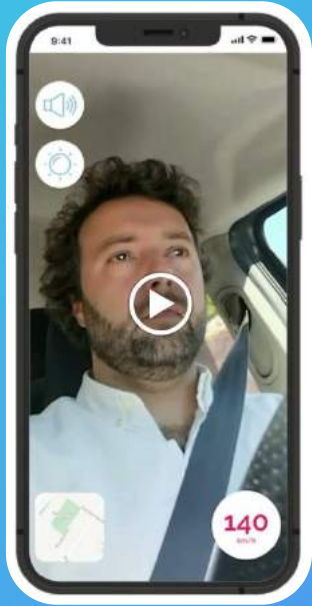


David Agnew - Investor - Experienced with putting automated safety systems into production, defining and utilizing advanced development tools, and government interface and collaboration for regulations and public safety. Twenty Patents authored.

<https://www.linkedin.com/in/david-agnew-7b14596a/>



Achievements **to** date



- First version of the WingDriver app launched, with sleep detection, fatigue detection, driver distraction and driver's actions.
- 86.000\$ USD raised from Business Angels.
- We are collecting data from drivers since June 2021.
- We have 5 early adopter companies using our app
- We are in conversations with 4 insurance companies, 4 mapping companies and 4 professional fleets.



Near **term** milestones

December
2021

Release of App version 1.3 with overall improved accuracy and new fatigue detection (pre-sleep intervention) and night vision capabilities (using the phone's IR camera to see at night and through sunglasses).

March
2022

Release of App V1.5 with overall improved accuracy and new heart rate measurement (direct indicator of stress) and face recognition.
Release of SDK V1.0 with driver analysis and telematics.



Investment rounds

Seed

March 2022

Series A

December 2023

Series B

December 2025



Seed round

**1.5M
USD**

March 2022
to
December 2023

With the Seed Investment we will grow and prepare the company for the Series A planned for December 2023.

- The team will grow from 2 to 10 members, adding 6 software developers and 2 business developers.
- The technology roadmap will be complete with all the driver and vehicle monitoring features.
- We expect to sell 450k USD from mainly SDK deals.
- Collected more than 1B Km of data.



Series A round

**5M to
15M USD**

December 2023
to
December 2025

Mandatory Driver monitoring system in Europe and we are prepared, because:

- Our SDK is stable and proven that it works. It will be our primary growth engine.
- Consumer APP - available with full functionalities and with an interesting winning proposition for the driver. We predict that this will be our secondary growth engine.
- SDK/Apps will be certified by Euroncap to be considered an safety product with good ratings.
- Sell data will be our third growth engine.



Real users

... in real scenarios

...driving safely

and generating real data!

*Our vision is to be a major contributor to road safety for **all** drivers and to become the best driving naturalistic data company.*



Check our progress!



<https://urlgeni.us/WingDriver>





WingDriver™

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