M-adas - Monitor and diagnosis advanced systems.
An award-winning driver analysis solution, that utilizes Cybernetics technologies. Designed to prevent human errors and autonomous systems mistakes when planning travel speeds.

M-adas - subjective AI & Personal Data, according to driver risk index,
Vs AI that is based on Big Data.

M-adas - predicts drivers risk-taking behavior and its one of a kind, we are proud to be part of **Formula1**. An additional Paid- POC is already running with **CEMEX** fleets.

M-ADAS

Monitor And Diagnosis Advanced Systems

Speeding has been involved in

1/3 of all motor vehicle FATAL ACCIDENTS

Ilan Levy, CEO, ilan@m-adas.com

WEBSITE: https://www.m-adas.com/

Why we need "Drivers risk index"

"Drivers risk index" is a powerful tool that is used to diagnose behaviors that characterize the driver.

It is used for actuarial calculations, to update safety fleet managers, to investigate unusual events and even reward good drivers.

How it works today – old technology

- Collecting locations, speeds and other data from sources.
- Creating a sequence by filling holes using synthetic data.
- Determining the averages and standard deviations.
- Giving a score to the driver expressing the distance of his performance from the established constitution.

We at M-adas believe that:

We will never compare our drivers, it's just doesn't make sense. Drivers are different and different driving styles are not evidence of being "bad".
Even the better drivers will never be recognized in this way.
Tre reason is that vehicle fleets employ drivers who drive a wide variety of driving styles. The source of the difference can be almost everything: experience, age, work areas, mood, types of shipments, different loads, working on different hours of the day, different land topographies, different health conditions, self-confidence and changing moods.

Since Big Data averages are synthetic, it contain the same average of errors , so the size does not always matter.

Nearly **80%** of crashes involved some sort of driver inattention within **3 seconds** before the event.

Let's be realistic for a moment.
After years of trying to: educate, threaten, guarantee incentives and educate for careful driving, avoiding those **3 seconds** fails.

The only way to prevent those accidents is to bravely admit that people will always find new ways to make old mistakes.
Understanding that, we must keep the safety gap at all time and leave enough reaction-time for the "surprises".

It is known that women drivers are less involved in accidents than men.
Scientists have tried to give it explanations from different fields, but as we learned, the real reason is the competitive tendency of men to defeat themselves and try to shorten travel times to destinations.
We are even proud to point out the improvement in our performance, without taking into account that it is at the expense of response-time to surprises.
Someday it will happen, and surprise is the only thing that is 100 percent certain.

The Cause Of accidents

Other 7%

Human Factor 93%

Misc. 20%

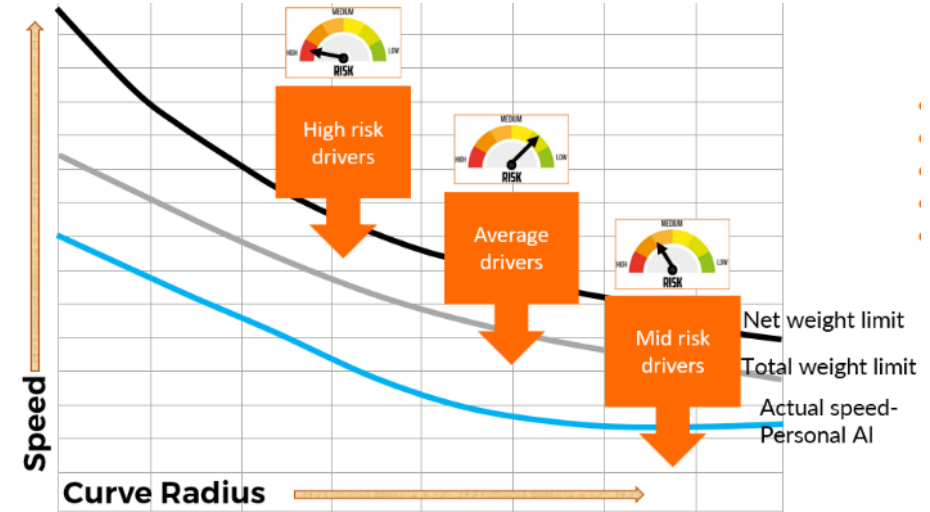3-Second lack of attention 80%
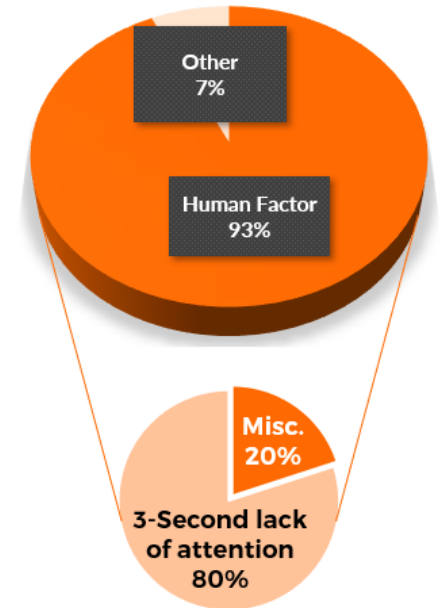
Subjective   VS   Collective

The advantage of the Subjective "Driver Risk Index".
This is based on limited personal information, compared to the
currently accepted methods based on Collective big data and
averages.

Collective
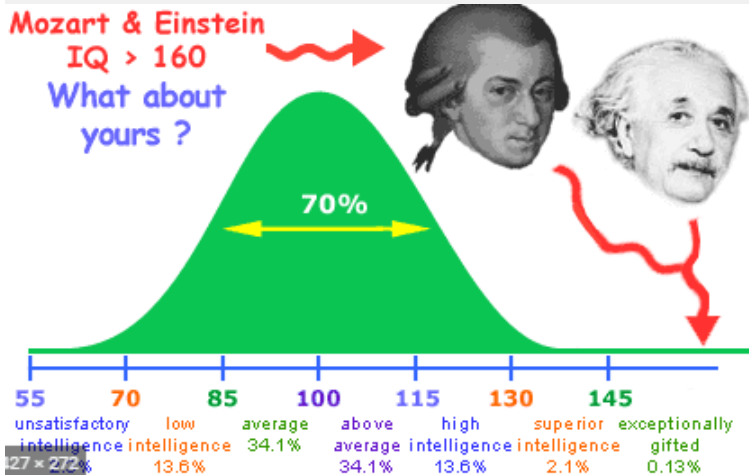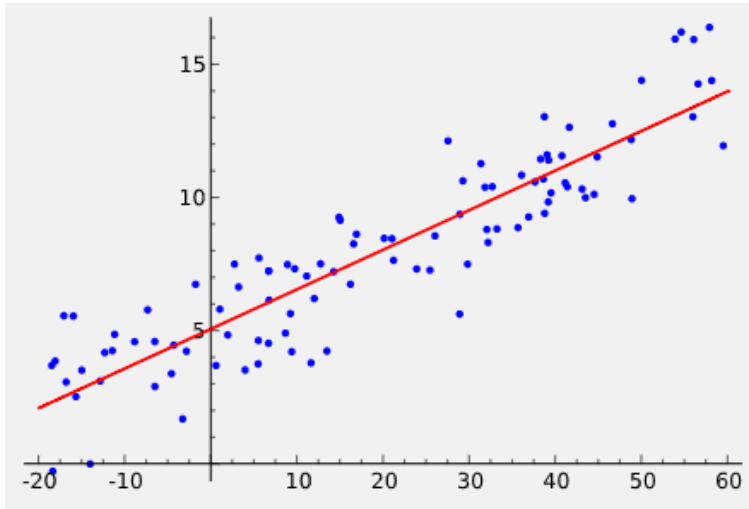
Subjective

The benefits of comparing the driver's performance to a subjective constants

The M-adas reports are suitable for the following tasks:

For fleets logistics:

Adjusting the vehicle, the load, the work areas and the driving hours for those that the driver is more efficient, according to the driver's characteristics learned from the reports.
And by that, combining the best "persona"* to the task.
*persona = driver+vihacle+cargo.

Reducing costs and depreciation, while increasing awareness of surfing to the desired speed, instead of aggressive and wasteful speed adjustments.

Perfect matching of training programs according to well-defined weak points.

Better ability to investigate unusual events. Data density (1 second), allows being used as evidence in court.

Preventing frustrations of drivers who are compared to other drivers.

For actuarial calculations:

An objective opinion on the driver's "courage" index and the risk he poses.

The Challenges

Avoiding comparison between drivers created a challenge, what will be the "constant" that will be used to determine the personal "constitution"?
The constant on which we believe is the best for the "M-adas-driver risk index" is the physical limitation of the "persona"* to perform the maneuver being tested.
*"persona"=Driver+vehicle+cargo.

The "Constant" - Easier said than done

To determine the capacity limit along the entire length of the driving routes, it was necessary to accurately calculate the effect of the various topographies, weather differences, the various types of cargo, horizontal and vertical slopes, the centers of gravity, and just about everything.

Geometries

Just calculating the radius in each waypoint with the assistance of GIS, gave us just about 70% of the solution. The road's geometry is not only radius, it is also made up of angles, slopes, intersections and right or left turns. Some curves have differences between the radius in different sections at the same turn.

Variables

From Constant side: Weather, road maintenance, hazards, etc.
From Personal side: different cargo, different vehicle, etc.

Trouble in bundles

Very large topographic information, many calculations in real-time,
inefficient positioning systems and inaccurate information sources.

An architecture built to meet the challenges

All that we need is :

User	Date	Latitude	Longitude	Incline	Actual Speed
#76#	12:21:22	31.97611	34.94849	0	25
#76#	12:21:23	31.97611	34.94849	0	21
#76#	12:21:24	31.9761	34.94848	0	22

Challenge		The method	
A lot of information processing.	⟺	Data & Calculations is done in the cloud.	SOLVED
In accurate Speed.	⟺	Vehicle Canvas OBD.	SOLVED
Position.	⟺	Location sensors, cellphones, Multimedia systems, surveillance equipment.	SOLVED
Updated the Data Base that affects the calculations on the cloud.	⟺	Information from various sources and the users themselves.	SOLVED
Cyber?	⟺	M-adas is used at the client's side, just to collect position and speed, little information does not require a permanent connection to the network.	SOLVED

Our Solution

Inputs :   Sources :

Inputs	Sources
The cognitive profile of the driver	Clients Portal
Load, cargo characteristics	fleet manager
environmental constants	GIS Collective's data driving
environmental variables	Governments Global AI In-Vihacle sensors
Vehicle dimensions	Manufacturer data
Perso"Rebalancing "na	Driving Data Analyzer

SaaS

M-ADAS

Process Validation

Continued validation

Process design

Process qualification
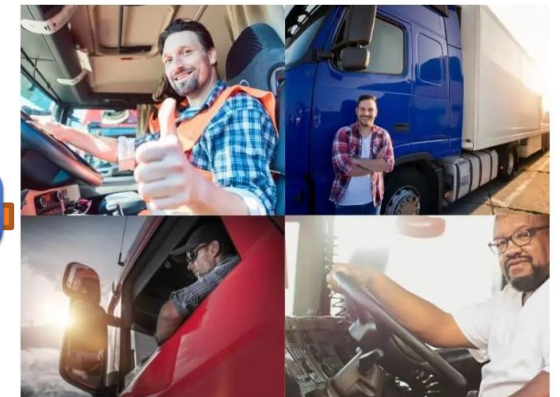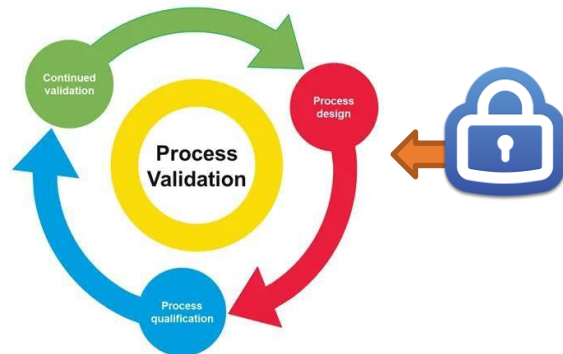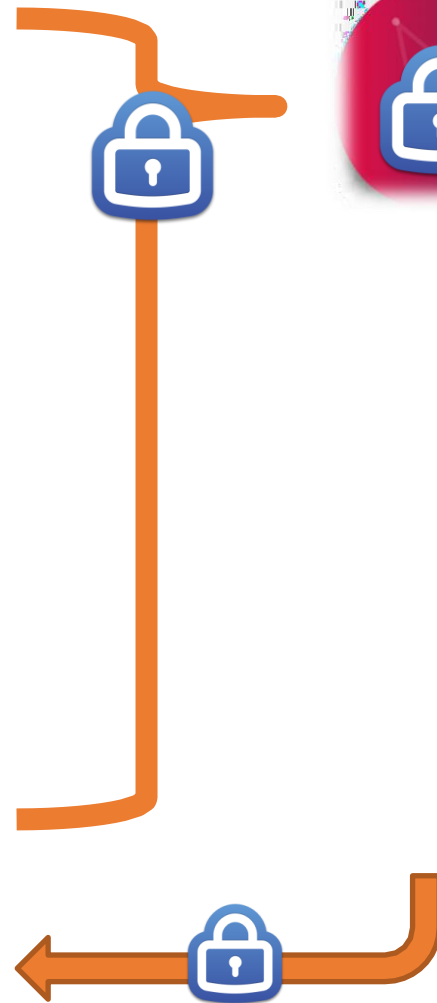
Our Solution is <u>Secure</u>

- Our solution is secure by design.
- We have senior cybersecurity expert in our team.
- We do not collect/aggregate personally identifiable information.
- All data in transit is encrypted to ensure its authenticity and integrity.
- All stored data is encrypted.
- We follow OWASP and NIST best practices.
- We monitor our solution 24/7 for unauthorized access and data leaks