

SafetyNex

. Reduces accident rate by 20% with human drivers

. Makes Autonomous Driving systems much safer

. Validated by market for mass-volume deployment

. SafetyNex is an **onboard software component** that computes in real time at each moment and with anticipation the **risk** that the driver is currently taking. Driver may be Human or an Autonomous Driving system.

. SafetyNex compares driving behaviour to driving context using a **big database of cautiousness rules** extracted from road safety experts worldwide during **15 years of collaborative research programs**. This comparison leads to compute onboard, at each moment in real time, a value called « **driving risk** » that is predictive of accident situations.

. SafetyNex is an **eXplanable Artificial Intelligence (XAI)** (see [DARPA](#) research program on Artificial Intelligence)

. read publication : [20% of accident rate reduction](#)

What do you call **driving risk** ?

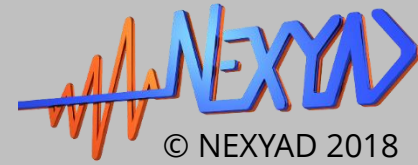
Video explanation :
notion of « driving risk »
used in **SafetyNex**
(short anime video 1 min 49 s)



Alternative link for China : 中国

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What is the market?



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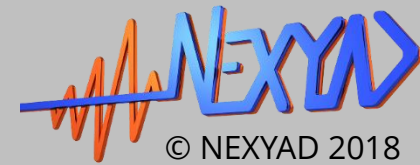
Alert human driver in real time and reduce accident rate by 20%

- . **Automotive** : Vocal Driving Assistants
- . **Car Insurance** : proactive telematics, « driving risk » *big data* recorder
- . **Fleets** : proactive telematics

Give to robotized car the awareness of the risk it is currently taking

- . **Automotive** : ADAS (Anticipation for ADAS)
- . **Automotive** : Autonomous Driving (make existing autonomous driving system much safer because it becomes adaptive to risk, using SafetyNex as an added layer) : a mandatory feature to **go to level 5**

What **value** does SafetyNex bring to **fleet market** ?



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20% of accident rate reduction



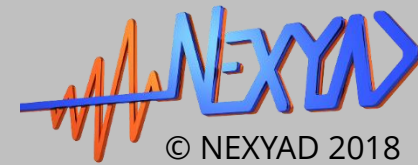
SafetyNex can be used onboard to **alert driver** in real time with anticipation if risk is rising too much, letting time to slow down and **avoid a potential accident**

It **reduces accident rate** at least by 20% :

- . Reduction of the number of **severe injuries**, reduction of workers' **compensation costs and number of days away** from work, reduction of **repair and replacement costs**, better **negotiation** with motor insurer
- . **Corporate social responsibility** : take care of your drivers, and of the others, on the road around
- . **Drivers scoring** (in terms of road safety) : for a better **training** and for **risk prevention** programs
- . **Better image** with customers (i.e. less late delivery due to accident)

SafetyNex runs on telematics device, dashcam, and on smartphone, full GDPR compliant (for European market)

What **value** does SafetyNex bring to **motor insurance market** ?



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20% of accident rate reduction + qualified big data (connected vehicle issue)

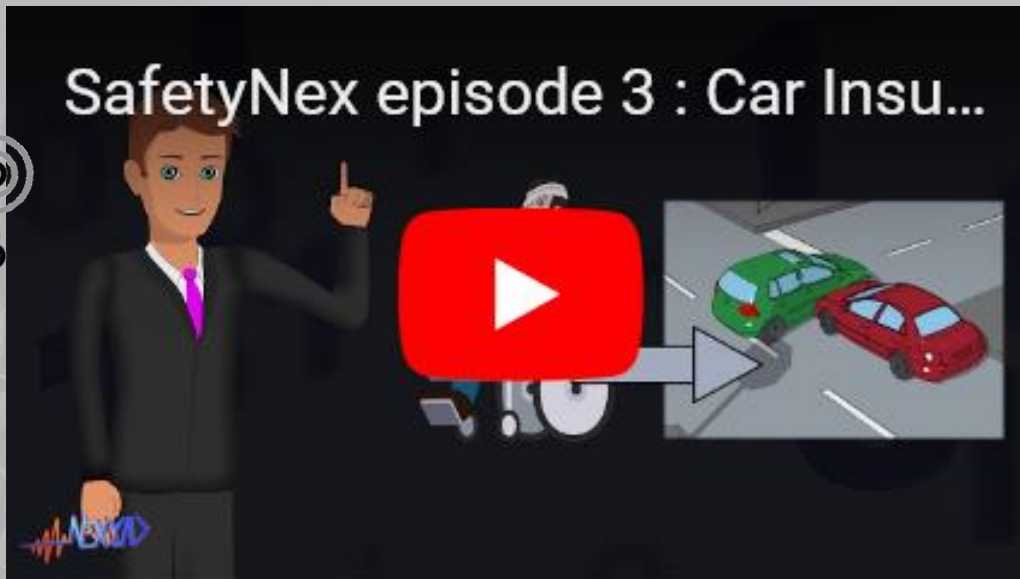
SafetyNex can be used onboard to alert driver in real time if risk is rising too much, letting time to slow down and **avoid a potential accident**. It **reduces accident** rate at least by 20% :

- . **Increases margin**
- . **Provides « driving risk » data** to actuaries and data scientists (for ICV, UBI, etc) : feeds cloud **big data**
- . Is very useful in Insurance **Prevention** programs

SafetyNex episode 3 : Car Insu...



Click



SafetyNex runs on telematics device, dashcam, and on smartphone
full GDPR compliant (for European market)

What **value** does SafetyNex bring to ADAS and Autonomous driving **market** ?



Makes Autonomous Driving much safer and helps for cockpit functions

- . Brings risk information to **Vocal Driving Assistants** (alerts of risk, risk as a context descriptor to adapt HMI)
- . Can be used to servo-control **ADAS** and **Autonomous Driving** systems, aiming to keep the risk under a max value : i.e. Autonomous Driving system can automatically slow down when risk becomes close to the max value, and verify that « driving risk » is reduced. Then Autonomous Driving system can cope with unknown situations that were not imagined by engineers in their base of scenarios (we call it « Adaptive AD »). Note : by modulating max value, one modulates the aggressiveness of Autonomous Driving system.
- . Brings new **business models** and **revenue sharing** opportunities with fleets and car insurers



SafetyNex runs on android, iOS, Linux, Windows full GDPR compliant (for European market)

More technical information on application of SafetyNex to **Autonomous Driving** :
https://nexyad.net/Automotive-Transportation/NEXYAD_ADAS_ADS.pdf

May I have a little more **technical information** ?

SafetyNex software component (API / SDK)

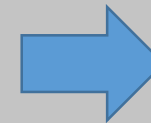
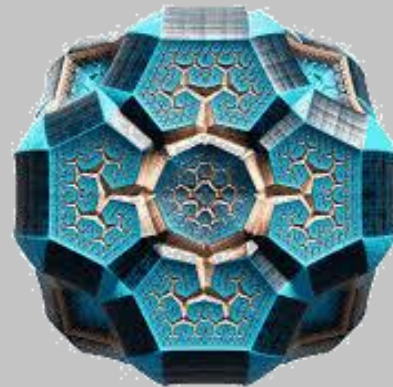
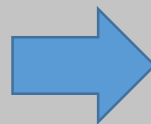
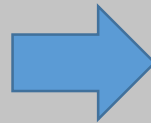
Mandatory

Inputs :

- . Digital MAP(t)
- . GPS(t)
- . Accelerometers(t)

Optional
Additional

Inputs (*)



Real time Outputs :

- Driving Risk (t)
- Risk alert (t)
- Overspeed alert (t)

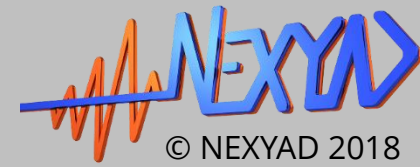
Stats Outputs :

- at the end of trips :
- Risk profile(trip)
 - Usage profile(trip)

(*) : data coming from ADAS sensors, from data flows, and from cockpit monitoring : i.e. interdistance, time to collision, size of free space, presence of vulnerables, visibility (quality and distance), road grip, X2V warning « accident ahead », X2V warning « construction area ahead », vigilance/drowsiness of driver, ... some of those additional inputs can be fed by the 3 camera based NEXYAD perception software components : VisiNex, RoadNex, ObstaNex

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May I get even more information ?



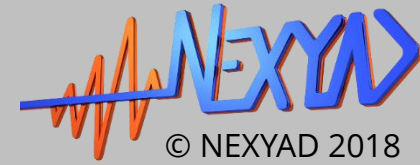
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Who should I contact ?



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