NEXYAD 95 rue Péreire 78100 Saint Germain en Laye, France +33 139041360 http://www.nexyad.com

## Congratulations ! <br> Welcome to SafetyNex Experience

$\mathrm{N}_{\mathrm{x}}$Safer Nex Dijyer
Warns the driver before danger User friendly text to speech HMI Proposes individual advices periodically
Cas' Josujance
Estimates driving risk profiles
Reduces road accident rate by $20 \%$
Pay as you drive / Pay how you drive Allows to launch prevention programs Silver and beginners coaching
Cas manoufactures
Smart navigation for ADAS
Real time monitoring for Autonomous car
Mass markseter
Rewards good drivers (nudge theory)
Enhances customers loyalty
戸•eet ssanjages
Reduces loss costs
Supervises professional drivers

http://www.safetynex.net

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#### Abstract

IMPORTANT: There are some cases where it is not possible to estimate risk: no GPS, no information on the electronic map, no electronic horizon, the other cases of unrated distance or duration are every «trivial » case ! i.e. if car is still waiting for the green at a traffic light, if car is stucked in traffic jam, if car is in a long straight line at the same speed on highway ... risk is near zero and SafetyNex does not record it because it would fill histograms with an infinite lenght column. This explains why in some cases, there may be a big difference between «total distance» and « total rated distance» or between « total duration» and « total rated duration » (the case of highways often leads to it).


## . Exemple of recorded data : analysis of ONE trip « User 1 »

For a given trip and « user 1 » (same may be done for a given person among several trips, statisticians may cross data ...). Here are graphic renders that are not provided by NEXYAD. Those graphic renders are made in Excel using recorded data on a trip. It is just a quick sample of what you can do.

## USAGE recorded data

Distance $=19 \mathrm{~km}$
Rated distance $=15 \mathrm{~km}$ (there are some cases where it is not possible to estimate risk : no gps, no information on the electronic map, no electronic horizon, etc ...)
Total duration $=29 \mathrm{~min}$
Rated duration $=18 \mathrm{~min}$
Start time 29/11/2016 08:38
End time 29/11/2016 09:07



Duration (min) x kind of road


Rated duration (min) $x$ kind of road



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## RISK

Score of Safe Driving on roads : 88\%
Score of Safe Driving in urban traffic : 97\%
Global Score of Safe Driving : 94\%
Rated distance on roads $(\mathrm{km}) \times$ risk slot


Rated distance in urban traffic (km) x risk slot

Risk slot Risk slot Risk slotRisk slotRisk slotRisk slotRisk slot Risk slot Risk slot Risk slot

| $[0 \%$ | $110 \%$ | $120 \%$ | $130 \%$ | $140 \%$ | $150 \%$ | $160 \%$ | $170 \%$ | $180 \%$ | $190 \%$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $10 \%]$ | $20 \%]$ | $30 \%]$ | $40 \%]$ | $50 \%]$ | $60 \%]$ | $70 \%]$ | $80 \%]$ | $90 \%]$ | $100 \%]$ |

Rated duration on road $(s) \times$ risk slot


Rated duration in urban traffic (s) x risk slot


| $[0 \%$ | $110 \%$ | $120 \%$ | $130 \%$ | $140 \%$ | $150 \%$ | $160 \%$ | $170 \%$ | $180 \%$ | $190 \%$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $10 \%]$ | $20 \%]$ | $30 \%]$ | $40 \%]$ | $50 \%]$ | $60 \%]$ | $70 \%]$ | $80 \%]$ | $90 \%]$ | $100 \%]$ |

On this scheme, bars are the number of km driven with risk between $\mathrm{x} \%$ and $\mathrm{y} \%$.
For instance, we can see that 1 km was spent with a driving risk value between $40 \%$ and $50 \%$ during the entire trip.

On this scheme, one can notice that $1,3 \mathrm{~km}$ was driven with a driving risk between $20 \%$ and $30 \%$.

On this scheme, bars are the number of secondes spent with a risk between $x \%$ ad $y \%$.
For instance, we can see that 1 km was spent about 50s with a risk betwenn $40 \%$ and $50 \%$.

On this scheme, the driver spent more than 100s with a risk between $20 \%$ and $30 \%$.

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## . Exemple of recorded data : analysis of ONE trip « User 2 »

## USAGE recorded data

Distance $=36 \mathrm{~km}$
Rated distance $=27 \mathrm{~km}$ (there are some cases where it is not possible to estimate risk : no gps, no information on the electronic map, no electronic horizon, etc ...)
Total duration $=29 \mathrm{~min}$
Rated duration $=24 \mathrm{~min}$
Start time 16/12/2016 20:04:20
End time 16/12/2016 20:44:48



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Total duration $(\mathrm{min}) \mathrm{x}$ kind of road

Total rated duration $(\mathrm{min}) \mathrm{x}$ kind of road

More data to follow next page

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## RISK

Score of Safe Driving on highways: 100\%
Score of Safe Driving on roads: 99\%
Score of Safe driving in urban traffic : 78\%
Global score of Safe driving : 93\%




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## USE CASE : Quick visual analysis

One can see that USER 2 is musch safer than USER 1, in terms of global distribution of risk. But USER 2 got a lower score of Safe driving in urban traffic. Let us compare the two distributions :

USER 1

Rated distance in urban traffic (km) x risk slot

$N B$ : first slot is taken out of the analysis

USER 2


One can see that, however safe User 2 behaviour is, this driver got some high risk alerts. It means that this driver is globally much quiet and serious, but sometimes doesn't understand danger.

This profile should be considered in a different way from USER 1, and of course from a driver than would have a risk histogram with only high risk slots.

Shape of histograms opens the doors to many analysis and strategies for car insurance and fleet management (prevention, training, incentive, etc ...).

NB : car insurers ALREADY estimate risk for every driver. SafetyNex driving risk histograms are ADDITIONAL data. Crossing and correlating those new data with all regular actuary data should give new leads of strategies.


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Let's consider that USER 2 is a suburban driver that goes to his/her office everyday and has 3 possible pathways (as it is the case for almost every suburban driver) :
. The « old » pathway : only urban traffic
. The «new » pathway : only peri urban highway
. A mix : half urban, half highway


One can see that User 2 is completely Safe on highways.
Then in a risk point of view, the choice of pathway is very important. And from the knowledge of address of User 2 and address of office, it is NOT possible to estimate the real risk (only an average risk as a projection of other drivers accident in the area among the last $X$ years).

SafetyNex risk profiles bring as much information as your imagination will allow.

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