ADAS Risk Score

Facing global risks

Two-thirds of global losses are uninsured

Road safety
There are 1.2 million road casualties a year. Driver and vehicle scoring, as well as technologies like driver assistance (ADAS), can help us dramatically reduce road casualties and develop a safer mobility future.

Cyber risk
The annual cost of cyber crime to the global economy exceeds USD 600 billion. Cyber solutions help us better manage and mitigate risks.

Natural catastrophes
The natural catastrophe protection gap totalled USD 193 billion in 2017. Parametric solutions can make insurance more accessible, affordable and provide immediate pay out for individuals and businesses to bounce back quickly.

Food security
With only 25% of the agricultural market insured, the market is full of opportunities to grow. Agricultural re/insurance solutions leverage latest technologies to help farmers best manage crops and recover from losses faster.

Solutions for a more resilient world

We help you grow your business and improve your profitability

By leveraging our risk expertise, strong capital base and new technology, we help you **grow your business** and **improve your profitability** by developing innovative solutions and by sharing the risk.

P&C Solutions: Support across your entire value chain

From innovative design to claims optimisation

P&C Solutions for your every need

Increase efficiency, steer portfolios and grow into new markets and segments

P&C Analytics

- Portfolio Insights interactive risk visualisation for steering and growth
- Tailored P&C Analytics consultancy services to solve your every need
- Behavioural Economics solutions to boost client conversion & retention

Property & Specialty

- CatNet® natural hazard risk analyser
- CatServer: NatCat modelling and expertise for your tools
- Sophisticated engineering underwriting with PUMA
- Agro Suite modular, end-to-end agriculture solutions

Cyber

- Cyber Product Suite for cyber insurance product development
- Cyber Analytics Platform: Score and manage portfolios & accumulation
- Identify and manage silent cyber exposures with Decrypt

Liability

- Analyse and model liability portfolios with Forward Looking Modelling (FLM) to grow into new markets and segments and provide input for your liability pricing tools
- Manage Casualty Accumulation risks

Parametric

- End-to-end dynamic pricing, risk monitoring, policy administration, automated claims pay out and real-time reporting for:
  - Flight delay
  - Earthquake
  - Tropical cyclone

Automotive & Mobility

- Assess vehicle safety features with the **ADAS Risk Score**
- Insurance-relevant driver scoring with end-to-end telematics solution
- Grow strategically and steer portfolios with Motor Market Analyser

SwiftRe®

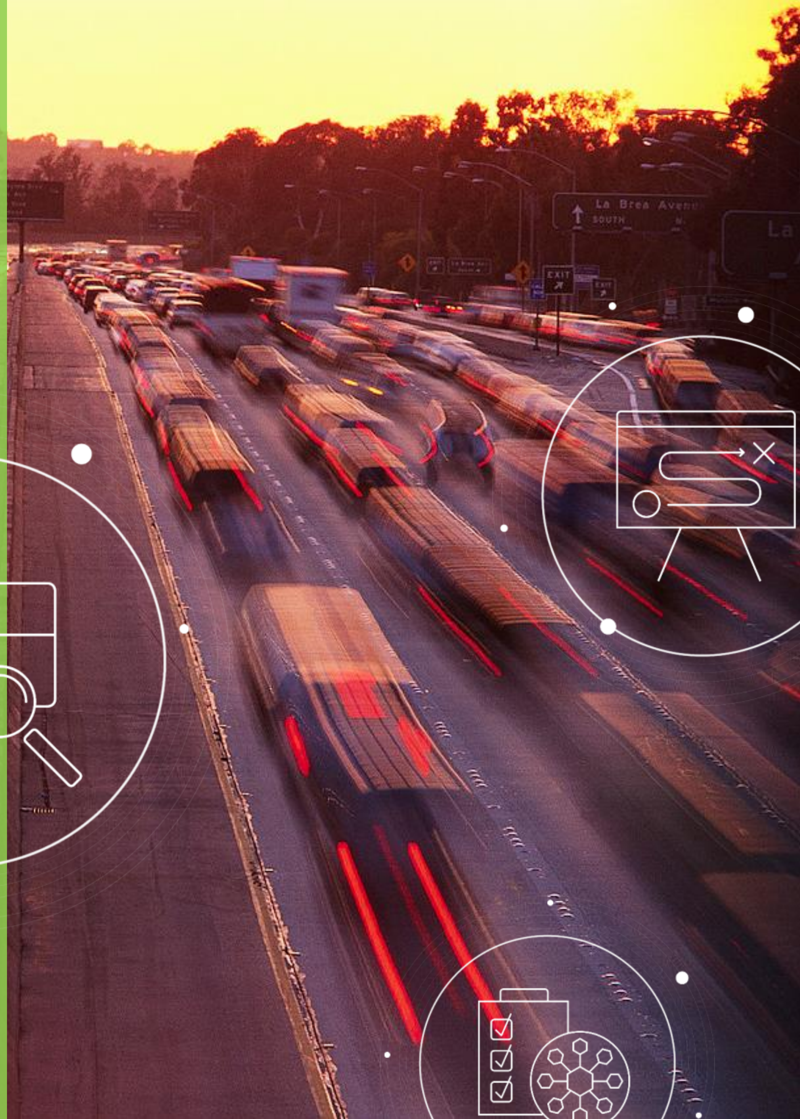
- Online risk placement, claims and accounting platform
- Cost-effective risk management
- Full transparency into entire portfolio

Innovation

- Agile (co-)creation of next generation solutions
- Access to new risk pools and markets
- Fast development and time-to-market via Swiss Re's partner ecosystem

01

Opportunity



The motor market is changing fast

Digitalise vehicle data to gain a competitive edge

Motor provides **liquidity and access** to customers

Automated vehicle technology*** is already in use

>40%
Share of motor in global non-life premiums*

Global market for ADAS features is expected to reach more than **$67 billion by 2025**, **growing at a CAGR 19%****

* Source: Swiss Re, Ptolemus 2016, Osservatorio Connected Insurance 2016 Bain & Company and ANIA
** Source: Grand View Research, Advanced Driver Assistance Systems (ADAS), Market Report, 2018-2025, published in 2018.
*** Automated vehicles are equipped with Advanced Driver Assistance Systems (ADAS) features, e.g. emergency brake assist, lane keep assist and parking assistant

ADAS risk modelling increases pricing accuracy

Helping you transition to new business models

Deliver added value to today's consumers

Traditional risk pricing model	Usage Based Insurance (UBI) scoring model	Automated vehicles scoring model
• Age • Driving years • Territory • Vehicle data • Previous claims	• Driver behaviour • Context of driving • Surrounding information • Comparison to other drivers	• Advanced driver assistance systems (ADAS) • Assess vehicle safety feature effectiveness • Analyse ADAS penetration
Risk proxy	**Behavioural rating**	**Vehicle rating**

Swiss Re helps accurately price ADAS-enabled vehicles to boost your motor profitability

ADAS features are not yet reflected in most motor insurance tariffs Investment is required to assess ADAS effectiveness

#1 What ADAS feature is a customer's vehicle equipped with?

#2 How effective are those particular ADAS features in reducing the frequency and severity of accidents?

#3 How do customers use these ADAS features?

Correlation assessment of ADAS features **is complex due to the high variety of features available** (brand, model, firmware)

Limited or no access to individual ADAS features for underwriting

Extensive ADAS testing is required to determine effectiveness

ADAS effectiveness beyond brand and model depends on location and conditions

Lack of resources and investments in gathering information and establishing infrastructure

Market complexity with n-insurers and m-OEMs make thorough assessment challenging

02

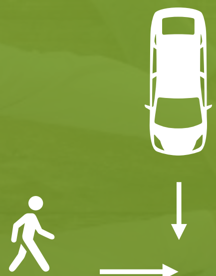
Value Proposition

Swiss Re's methodology assesses ADAS effectiveness to provide an accurate risk view at the individual vehicle level

1 Crash data analysis

Experience analysis

2 Vehicle test



Situational analysis

3 Simulation

Exposure analysis

ADAS Risk Score

Relevance: relative number of accidents that can be mitigated by the system, as the maximum avoidable.

Performance: expected mitigation power of the ADAS relative to the specific accident type.

$$ADAS\ effectiveness = relevance \times performance$$

The ADAS Risk Score model is based on manufacturer-reported ADAS specifications. It uses anonymised and aggregated results from portfolio analyses, data collected during crash tests and computer simulations of accident scenarios to assess ADAS effectiveness.

Use Swiss Re's ADAS Risk Score to sharpen your motor pricing

1 Portfolio profitability

Quantify the impact of ADAS features on the profitability of a given portfolio

2 Underwriting factor

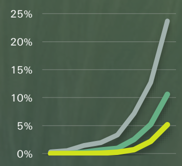
Introducing ADAS as an additional underwriting factor

3 Growth opportunities

Insights for ADAS-specific campaigns

Portfolio analysis: The first step towards implementing the ADAS Risk Score into your pricing model

ADAS penetration



Analysis of real ADAS penetration in portfolio, including optional features.

Comparison with market penetration

Segmentation analysis

Identification of ADAS risk groups in portfolios using clustering analysis

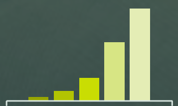
Assessment of grouping granularity

ADAS Risk Score

	Score
ABC	210
DEF	188
GHI	53
JKL	24

Generation of ADAS Risk Score for each vehicle, in tabular format

Historical analysis



Look at evolution of ADAS penetration and reliability in the portfolio

Analysis of historical ADAS Risk Score development

Correlation analysis

Assessment of correlation between ADAS Risk Score, single ADAS features and other insurance variables

Clustering of customers and level of ADAS Risk Score

Pricing exercise

Support with integration of ADAS features in pricing analysis

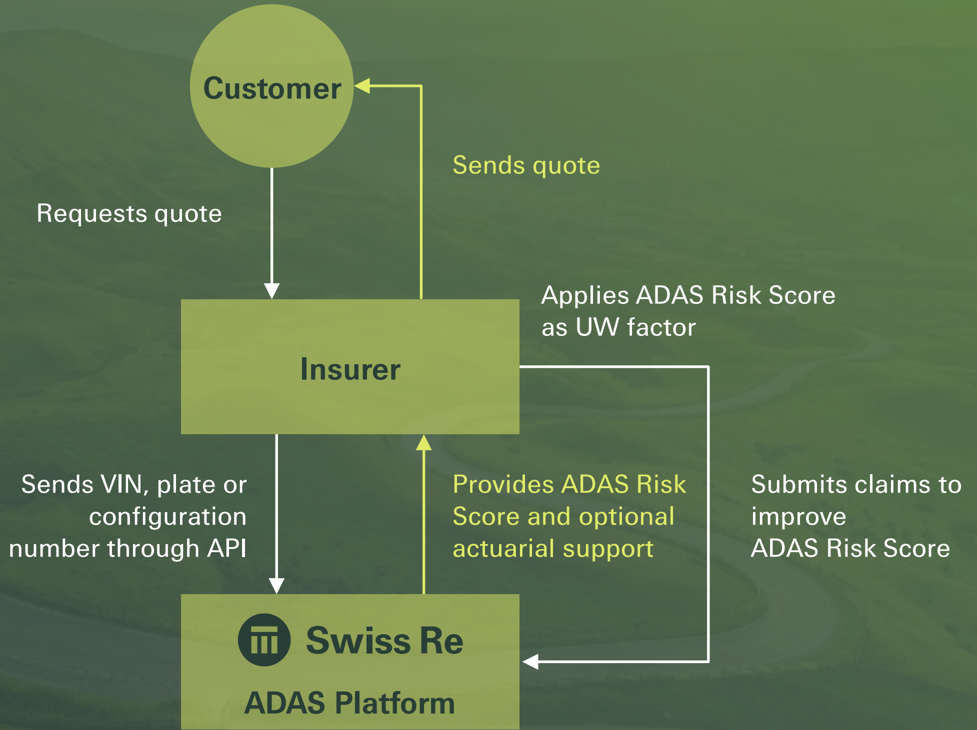
Underwriting factor: Access the web-based ADAS Risk Score from our platform to include it as an underwriting factor

How:

Swiss Re´s ADAS Risk Score is **currently available for BMW** via online platform

Outlook:

Onboarding other car manufacturers globally



Advantages of a collaboration with Swiss Re

Swiss Re

1. Our proposal can be adapted to your local market conditions
2. High quality of customer experience
3. Risk sharing through our reinsurance capabilities
4. Low engagement costs such as portfolio analysis as first pilot
5. Dedicated customer support (actuarial, IT, marketing, etc).
6. More than 150 years of (re)insurance experience
7. AA- Standard & Poor's Notation

03

Rollout

Portfolio analysis: Scope and duration tailored to your needs

Week 1

Objectives and project planning
Determination of scope, timeline and dedicated project resources from both you and Swiss Re

NDA
Signature of a Non Disclosure Agreement

Week 2

Cooperation agreement
Formalisation and signature of the cooperation agreement

Week 3

Data analysis and enrichment
Data exchange, technical workshop and feedback loops. Data analysis can start as soon as the client has shared the relevant datasets with Swiss Re and once the cleansing and enrichment processes have happened.

Week 6

Presentation of first results
In parallel, regular status updates and progress reviews

Week 8

Final presentation of results
Complete portfolio analysis performed.
The portfolio analysis is a good basis to discuss Swiss Re's additional ADAS Risk Score propositions, i.e. to use the score on an ongoing basis as an underwriting factor or to engage in ADAS specific growth campaigns.

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We're smarter together

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