The automotive industry is facing the biggest upheavals in its history, given the trends in electro mobility and autonomous driving. The convergence of various technologies and upcoming automotive trends are having a significant impact on the industry’s casualty insurance risk landscape.
Connected and software-controlled cars

The importance of electronics and software in vehicles has dramatically increased in recent years and will in the years to come. Modern cars can be regarded as sophisticated computers on wheels and are increasingly part of a complex information technology environment. Technology brings benefits such as a reduced number of accidents and better traffic management. But as cars become increasingly controlled by self-driving technology software and better connected to the internet, the potential for software malfunction and cyber threats increases.

Driving-assisted technology is of a safety-critical nature and defects in these systems can lead to accidents, creating liabilities for original equipment manufacturers (OEMs) and their suppliers.

Vehicle platform standardisation

Auto production using standardised platforms is a key trend under way in the automobile industry. The majority of global auto manufacturers are reducing the number of these vehicle platforms by means of global platform standardisation and adoption of a modular strategy. Standardisation of the OEM platform has significant potential to lower costs and increase flexibility, but is accompanied by increased complexity of the supply chain and quality control. The standardisation of components and increased parts order volumes implied by mega platforms could pose significant serial or accumulation loss potential, as well as the risk of major product recalls due to cross-brand/cross-model platforms and common parts strategies.

Stricter and extended recall regulations

Vehicle recalls have been rising in recent years as a result of the increased usage of common components across models and due to the fact that the authorities in many countries have tightened their safety requirements and become increasingly vigilant. China is improving its automotive industry's recall system by introducing stricter regulations, while India is close to completing a mandatory vehicle recall policy. The U.S. National Highway Traffic Safety Administration (NHTSA) is introducing a new auto recall database that increases transparency and will likely reduce the number of unreported recalls. The stricter/more extended regulation will quite likely increase the size and frequency of recalls in many countries.

Shift of risk from OEM to supplier

OEMs are increasingly calling for tighter contractual responsibility from their suppliers for potential product liability, warranty and recall claims. Tier 1 suppliers have increased in size as a result of the consolidation of the supply chain during the last decade and are thus increasingly the drivers/developers of the new technologies used in cars (eg LED lighting or batteries). This shift in design responsibility is being accompanied by an increase in value creation per car on the supplier side (currently about a 75% share). This shift in cost and risk is likely to translate over time into an aggravation of the supplier’s product liability and recall loss history due to car manufacturers enhancing their cost recovery efforts and passing on recall and warranty repair costs to suppliers.
## What can insureds do to minimise these risks?

- OEMs and suppliers need to make privacy and security concerns about connected cars a top priority.
- Equip connected vehicles with robust multi-layer cyber security.
- Identify potential vulnerabilities, threats and risks to software and data security by establishing a rigorous risk assessment approach.
- Proactively monitor and detect data breaches and threats.

## What is important to bear in mind when insuring these risks?

- Build awareness for cyber exposures as part of normal product liability.
- Address various unique and complex questions with respect to liability, as vehicle control and accident responsibility is increasingly shifting away from the driver to the manufacturer.
- Address cyber risks affecting privacy and the data security of connected cars with specific covers and not absorb them in conventional insurance products.
- Build expertise of big data analytics and develop actuarial and modelling techniques to prepare for increasingly autonomous features.

## Additional Points

- Apply a globally aligned total quality management system (TQM) to handle the technical complexity and risks associated with mass standardisation.
- Improve recall preparedness for handling global large-scale recalls.
- Strive to continuously adapt/improve quality standards to keep design and manufacturing errors to the minimum/close to zero.

## Automotive suppliers should continuously monitor and analyse automotive recall databases/consumer complaints, warranty claims as well as repair and service records.

- Automotive manufacturers should closely monitor changing regulations and be prepared to implement these changes.
- Ensure set-up structures comprising all the relevant departments in order to improve recall preparedness and implement or update procedures for complying with all the regulatory reporting requirements (eg cross-functional team including a recall coordinator).
- Improve recall preparedness through dry-run or mock recalls aiming at identifying (and correcting) potential weaknesses in the recall process.

## Assess recall preparedness of suppliers and their OEMs.

- Implement processes to proactively and rapidly analyse recall data in key markets.
- Reflect changes in loss patterns with respect to frequency and severity of recall events in the rating/pricing approach.
- Closely monitor changes in government regulations and their impact on their markets; understand the effect that such developments may have on a recall portfolio.

## Clearly state design and manufacturing specifications in contract documents.

- Regularly update purchase order terms and conditions to ensure that liability transfer responsibilities are clear and covered accordingly.
- Suppliers need to be prepared to quickly identify the root cause of product recall or issues of liability relevance, contain the problem and provide suggestions for remedial action.
- Retain key documents concerning product testing and acceptance criteria, which should be readily accessible in the event of a claim/dispute.

## Understand OEM platforms and common parts strategies.

- Analyse large loss and accumulation potential through platform standardisation and the usage of common parts for OEMs/suppliers. Potential scenarios should be reflected in the underwriting approach.
- Understand the product portfolio and customer spectrum of automotive suppliers (eg overview of contract size or design batch sizes for key products).