

Navigating the Complex Landscape of Vehicle Homologation: Challenges and Opportunities

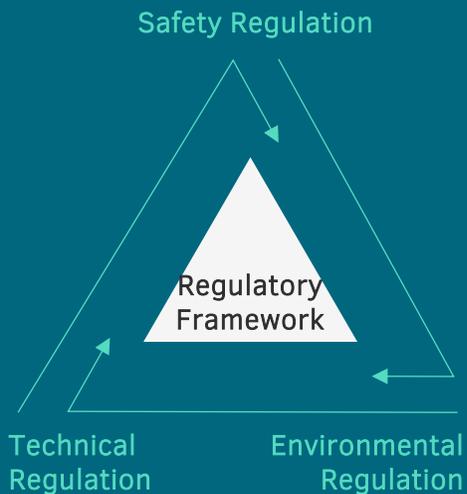
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Homologation is the mandatory approval process for new vehicle models

Homologation

- 1 Is coined by Safety Regulations, Environmental Regulations and Technical Regulations



- 2 Is defined through a **regulated process** and is **concluded** by a government-issued certificate allowing a product to enter a market

1

Safety regulations

- › Ensure vehicles meet standards to protect the well-being of users, occupants, and pedestrians:



- › Crashworthiness,
- › Occupant protection, and
- › Overall vehicle design, i.e., seat belts, airbags, breaks

Environmental regulations

- › Target reducing the impact of products on the environment and promoting sustainability



- › Focus on emissions and fuel efficiency, and
- › Set limits on pollutants emitted by vehicles, i.e., carbon dioxide (CO₂), nitrogen oxides (NO_x), particulate matter (PM), and hydrocarbons.
- › Encourage using cleaner and alternative energy sources.

Technical regulations

- › Aim at maintaining consistency, interoperability, and fair competition within the market.



- › Cover requirements ensuring proper vehicle functioning, performance, and compatibility.
- › Encompass technical specifications i.e., vehicle dimensions, weight limits, noise levels, etc.

2



Reporting to relevant authorities



Review and approval



Certification



Preparation and documentation of necessary aspects



Assessment and tests according to the regulatory framework

Homologation is important for OEMs to ensure regulatory compliance, market access and customer trust

Regulatory compliance

Homologation is often a **mandatory compliance requirement** set by governmental or regulatory bodies in various countries or regions. To **legally sell and operate** their vehicles in a specific market, OEMs must ensure that their products meet the established safety, environmental, and technical standards. Meeting these regulations is a fundamental obligation for OEMs to operate within the boundaries of the law.



Non-compliance can result in **legal penalties, fines, or even bans** on selling the products.

Market Access

Different countries and regions have their own **unique set** of homologation requirements. Without proper homologation, OEMs would be **barred from entering or competing** in these markets. Achieving homologation demonstrates a commitment to **meeting local standards**.



Compliance with homologation requirements is needed to **enter new markets, enlarge customer base and increase revenue**.

Positive Brand Image

Homologation assures consumers that a vehicle has undergone **rigorous testing**. A vehicle after homologation **fulfills stringent, and regulated standards** to be **safe, environmentally friendly, and technically reliable**.



Homologation demonstrates a commitment to quality, safety, and environmental responsibility. This can imply **positive brand perception, customer loyalty, and word-of-mouth recommendations**

Various regulatory frameworks and new technological developments pose challenges to the automotive industry during homologation

Regulatory Setting



Globally differing regulatory frameworks

Example:

- > UNECE: Europe, North America, Asia
- > UB/T: China



New regulations to accompany new technological developments

Example:

- > EU Battery Pass



Implications



- > Homologation processes are complex
- > Homologation processes vary across the globe
- > Homologation processes are not flexible enough to accompany changes in the regulatory framework brought by new technological advancements



Regulatory Challenges



High compliance costs
Using varying homologation processes to comply with regulations across the globe is costly in human and financial resources



Long time to market
Complicated and unsystematic homologation processes prolong the time to market and increase costs additionally

Related content:



[Interested in the EU Battery Pass and its implications for businesses?](#)



[Interested in the challenges currently posed by UNECE and UB/T?](#)



To future-proof and improve current homologation processes, countermeasures should be taken

1 Global harmonisation

Aligning homologation regulations and standards across different countries and regions, based on finding consensus on technical requirements, safety standards, and emission norms.

- Benefits:
- > Increased efficiency in design and development based on a standard set of rules
 - > Cost savings from research, testing and manufacturing by applying global standards
 - > Market expansion through streamlined homologation processes simplifying the entry of new markets
 - > Innovation acceleration through reshuffling investments from compliance to R&D

2 Streamlining certification processes

Simplifying and optimising the homologation processes by including and creating standardised documentation, digital platforms for submissions and clear guidelines.

- Benefits:
- > Decreased time-to-market through lower administrative burden and simplified processes
 - > Optimized resource allocation to concentrate on R&D, innovation and product excellence
 - > Reduced costs as simplified procedures reduce the need for legal and admin. Support
 - > Increase competitiveness trough faster certification of cutting-edge technologies

3 Enhancing stakeholder collaboration

Exchange between OEMs regulatory bodies, industry associations and other stakeholders can improve the definition and usability of homologation standards. Building a network of communication between OEMs and regulators can enhance the regulatory framework.

- Benefits:
- > OEMs are enabled to participate in shaping regulations
 - > OEMs gain early insights into upcoming regulatory changes preventing last-minute compliance challenges
 - > Compliance related risks and uncertainties are minimised as OEMs are consulted during the regulatory processes



Ease homologation to foster innovation



accilium as a partner

accilium's competencies



Stakeholder
We make sure that all stakeholders are involved and committed to support the chosen approach.



Innovation
We ensure to enrich the project by the most innovative and most suitable ideas.



Individualisation
We bring the flexibility to adjust existing formats to your needs or to develop new formats.

accilium's approach



accilium serves as a sparring partner and supports clients in enhancing efficiency and effectiveness along their complete homologation process by streamlining, adapting and developing processes for communication, collaboration and certification.

In a nutshell, homologation is a mandatory compliance requirement

...implying multiple challenges...

...calling for proactive measures...

... to become future-proof.

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- › Homologation is a lengthy and complicated process
- › Diverse regulatory frameworks exist globally including different processes and requirements
- › Technological advancements lead to a growing regulatory framework

› High compliance costs and long Time-to-market



2

- › Promote global harmonisation aligning standards on technical, safety and environmental requirements across countries and regions
- › Streamline certification processes creating standardised documentation, digital platforms and clear guidelines
- › Enhance stakeholder collaboration enhancing the regulatory framework

› Ease homologation and foster innovation



3

- › Ensure an efficient, harmonized and future-proof homologation framework
- › Develop safety and environmental guidelines aligned with market competitiveness

› Foster and ensure growth in the global automotive industry





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