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The Motorcycle Industry In Europe

The safe ride to the future 3.0

The motorcycle industry's commitment to road safety

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Table of contents

Contents

Abbreviations

Foreword by ACEM President, Michele Colaninno

1. A long-standing commitment to road safety
2. Looking into the future: connected, cooperative and automated mobility
3. Motorcycling as a mobility solution. The need for more tailored safety policies
4. The European Motorcycle Training Quality Label
5. Policy recommendations
6. Conclusions

Abbreviations

NOTE

Throughout this document, all references to “motorcycles” must be understood as references to L-category vehicles (i.e. mopeds, motorcycles, tricycles, light- and heavy quadricycles). The term “motorcycles” has been retained for the sake of convenience.

ABS	Anti-lock braking system
ACC	Adaptive Cruise Control
ACEM	European Association of Motorcycle Manufacturers
ADAS	Advanced driver assistance systems
AMVIR	Association of Motor Vehicles Importers Representatives (Greece)
ANCMA	Association of Manufacturers of Bicycles, Motorcycles and Accessories (Italy)
ANESDOR	National Association of Companies in the Two-Wheeler Sector (Spain)
C2CC	Car-to-car Communication Consortium
CBS	Combined braking systems
DVR	Deutscher Verkehrssicherheitsrat. German Road Safety Council
HMI	Human-machine interface
IRTAD	International Road Traffic and Accident Database
ITF	International Transport Forum
ITS	Intelligent transport systems
IVIS	In-vehicle information systems
MAI	Motorcycle approach indication
MCIA	Motorcycle Industry Association (UK)
MoU	Memorandum of understanding
OECD	Organisation for Economic Cooperation and Development
PPE	Personal protective equipment
PTW	Powered-two wheeler
PZPM	Polish Automotive Industry Association
TCS	Traction control systems
TPMS	Tyre pressure monitoring systems
V2I	Vehicle-to-infrastructure
V2V	Vehicle-to-vehicle

Foreword by ACEM President, Michele Colaninno

The latest OECD and CARE data[1] show that motorcycle safety in Europe has improved over the last decades. The number of fatal accidents involving powered two-wheeler users decreased from 7,612 to 3.861 between 2000 and 2023, a reduction of 55%. In parallel, the fleet of powered two-wheelers has been constantly growing, from about 28,3 million vehicles in 2000 to more than 40 million in 2023, an increase of 36,5%.

Although these statistics are certainly encouraging, further efforts might reduce road fatalities and serious injuries to meet the safety targets set by the European Commission and the United Nations for the current decade. To this purpose, our industry is committed not only to manufacturing safe and advanced vehicles, but also to lay the groundwork for the future, through initiatives in connected mobility, high quality training and strong cooperation with key stakeholders. This document showcases some of our most important initiatives in the area of motorcycle safety.

However, industry actions alone will never be enough. We need to take a Safe System approach towards motorcycle safety, simultaneously addressing the human, vehicle and road infrastructure elements. A stronger level of engagement from the public sectors and civil society is needed.

We also need to continue promoting policies that enhance motorcycle safety not only in Europe but beyond. Our industry is actively supporting all initiatives within the International Motorcycle Manufacturers Association[2] leading to safer motorcycling.

A combination of all these efforts will be instrumental not just in making Europe's roads safer, but they will also help reap the considerable benefits that motorcycling brings to society such as, better access jobs and services through affordable mobility, reduced traffic congestion levels as well as sport, leisure and tourism enjoyment.

Michele Colaninno
ACEM President, CEO of Piaggio

1 The International Road Traffic Accident Database is an OECD initiative. It collects international accident, victim and exposure data on a continuous basis. 29 OECD countries, including 17 EU Member States, are covered in the database.

2 IMMA is the association which represents the manufacturing industry of powered-two wheelers at the global level. The association deals with a wide range of areas including global technical regulations, road safety policy, and vehicle construction requirements.

1 A long-standing commitment to road safety

The vehicles manufactured by ACEM members are pursuing the highest levels of safety standards. Further to this, the motorcycle sector continues to invest in R&D operations to bring to market safety technologies that facilitate the integration of motorcycles into the transport system.

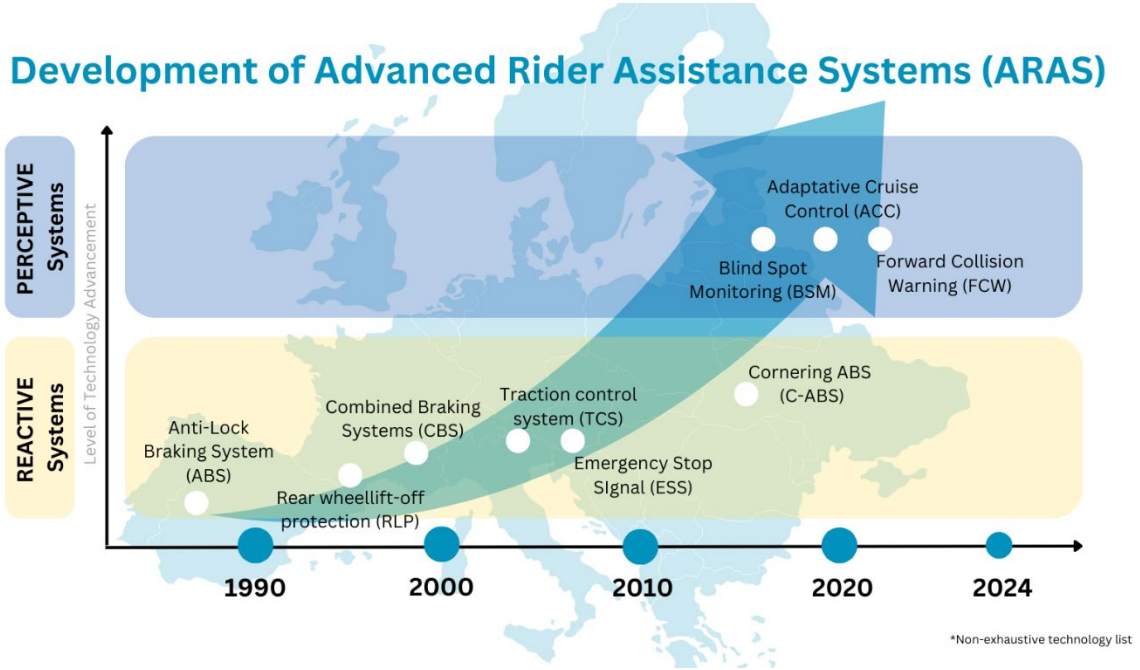
PTW technologies evolution

ACEM members continue supporting safety improvements, such as advanced motorcycle design, new intelligent features, new braking-, lighting-, suspension- and rider assistance systems. These technologies can help prevent accidents and contribute to collision reduction by supporting riders in critical situations. State-of-the-art technologies are deployed on different PTW segments considering their specific characteristics and use on the road.

Latest generation ARAS have moved from reactive systems to perceptive systems that are designed to monitor the motorcycle's surroundings in the front and in the back using radar sensors, to monitor the environment and detect potential hazards. These perceptive systems complement rider awareness and give the rider a warning.

Despite these evolutions in safe vehicle technologies, ACEM stresses the technological and user-based limitations of these technologies and therefore promotes the need for continued riders' awareness and education for proper and optimised use of vehicles to maximise riding benefits on the roads.

To facilitate this, ACEM continues to be committed to a collaborative approach with all other road safety advocacy stakeholders to raise awareness of safe vehicle technologies (Euro NCAP, ETSC, ACEA).



Non-exhaustive evolution of Advanced Rider Assistance Systems

Stopping right in time

Since 2004, ACEM members, as signatories of the European Road Safety Charter, have consistently demonstrated their commitment to motorcycle safety by equipping their models with advanced braking systems, such as ABS and CBS. The industry proactively adopted ABS on all L3-A2 and L3-A3 models well before the regulation made it mandatory for those categories. Today, ABS or CBS is mandatory for all L3-A1 vehicles, with ABS market penetration reaching 90%among ACEM OEM members. Furthermore, ACEM members have pioneered technologies like cornering ABS, rear-wheel lift-off protection, brake force distribution, and brake-by-wire, which enhance braking performance.

Seeing and being seen

Being detected by other road users is critical in motorcycle accident prevention. To make visual vehicle detection easier, ACEM members committed to equip all their vehicles with automatic headlamp on technology (AHO) as of 2003. Daytime running lights (DRL) and amber position lights (APL) are also used by the industry to make motorcycles more detectable for other road users.

Other relevant technologies available on the market include polyellipsoid headlamps, full LED lights (headlights, taillights and indicators), projector headlights, adaptive lights and cornering lights which automatically adjust headlights to curves, making night driving considerably safer.

Suspension and stability systems

High-performing suspension systems allow vehicles to adapt to different road surface conditions. They are also necessary for smooth handling and braking, and to keep riders isolated from road bumps. Over the years motorcycle manufacturers have developed a wide range of innovative vehicle suspension systems for different motorcycle usages.

They include electronic suspension systems, speed-sensitive electronic steering stabilisers, semi-active suspension systems (which adapt the response of the suspension to road conditions, vehicle speed and driving style) and self-regulating suspensions. All these systems allow maximum stability and increase users' control of the vehicle.

Vehicle stability systems combine stability control, traction control, ABS and dynamic power steering to improve the safety of the rider.

Rider assistance systems for motorcycles

Rider assistance systems can help prevent accidents and contribute to collision reduction by supporting the riders in critical situations. They can also offer convenience and enhance the experience of riding by making life easier for riders. Relevant examples include: traction control systems (TCS), tyre pressure monitoring systems (TPMS), electronic adjustable suspension, electronic cruise control, gear shift assistant, fuel economy assistant, proximity activation systems (i.e. keyless riding systems), in-vehicle navigation systems with safety related traffic information, adjustable vehicle riding modes, blind spot monitoring, and automatic stability control.

Blind spot detection technology will contribute to increase the level of safety for motorcyclists across Europe.
Copyright: Continental

It is important to understand that many advanced driver assistance systems were initially engineered for cars. However, they can be potentially dangerous if applied to motorcycles without a dedicated approach. This is why ACEM members work on specific engineering solutions for rider assistance technology.

2 Looking into the future: connected, cooperative and automated mobility

In recent years, mobility has increasingly become more connected and automated. Vehicles that can communicate with each other and with the road infrastructure are reshaping the way people travel, making transport safer, more accessible and more sustainable. At the same time, technological progress creates important challenges that must be met.

Cooperative Intelligent Transport Systems

One of the most frequent human errors in accident situations is failure to see motorcycles within traffic, either due to the driver's lack of attention, temporary view obstruction or low conspicuity of the motorcycle. This issue can be addressed by Cooperative Intelligent Transport Systems (C-ITS) which provide "digital conspicuity" to surrounding vehicles by warning drivers of oncoming motorcycles.

The motorcycle industry sees vehicle to vehicle (V2V) communication as a technology with a high potential to improve road safety across the EU and to lead to better integration of motorcycles in the transport system.

ACEM members have participated together with relevant national authorities in several road safety campaigns. These campaigns have focused on encouraging drivers to look for motorcyclists on the road. This is particularly important given that a high number of collisions are caused by car drivers noticing very late or even completely overlooking riders. Safety campaigns have also focused on the promotion of voluntary post-license training and of conspicuous and protective gear among riders.

Connectivity between vehicles would allow the possibility to warn drivers and riders of potentially dangerous situations. Source: Autotalks Ltd.

From the Memorandum of Understanding on C-ITS to the Connected Motorcycle Consortium

In March 2014, the motorcycle industry adopted a Memorandum of Understanding on C- ITS. The objective of this MoU was to coordinate the deployment by industry players of safety relevant C-ITS technology on motorcycles in the European market. The Memorandum is an expression of individual and collective commitment of ACEM manufacturing members to realise a shared objective to the benefit of everyone.

In 2015, building on the MoU on C-ITS, motorcycle manufacturers, suppliers, researchers and associations joined forces to create the Connected Motorcycle Consortium (CMC)[3] to ensure the integration of motorcycles into the future landscape of connected mobility.

The main objective of this platform has been to define common basic specifications for motorcycle ITS in areas such as: triggering conditions, localisation accuracy, algorithms and communicated data, as well as rider interface and antenna performance. These are very challenging problems from a technical standpoint. Specific engineering solutions are needed because ITS developed for cars are simply not transferable to motorcycles due to the differences in vehicle's dynamics.

The CMC journey began with the launch of the 'Basic Specification' in 2020 focusing on evaluation, verification and requirements standardisation. Since then, the CMC has progressed further with some key findings from its accident research, insights into rider behaviour, and detailed information about some safety applications.

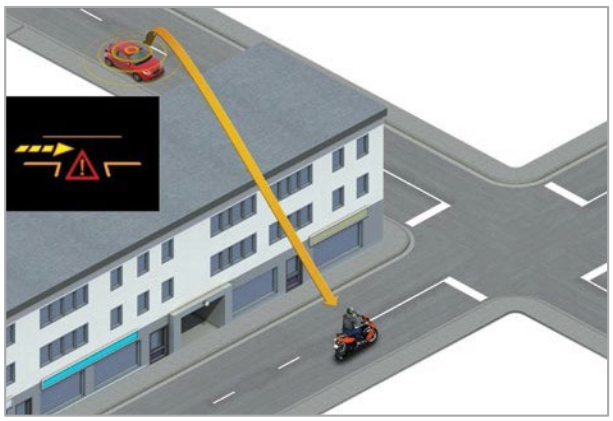
Motorcycle safety use cases were demonstrated at the Dekra Lausitz test track, Germany in late 2023. Together with various car OEMs at this live demo event the consortium showed several interactions between a car and a motorcycle where C-ITS applications or Advanced Driver Assistance Systems will help to mitigate the chance of a collision.

Based on connectivity a 'Do Not Pass Warning' informs the rider about a potential critical situation, demonstrated at the CMC live demo event at Dekra Lausitz test track, Germany in late 2023

3. www.cmc-info.net

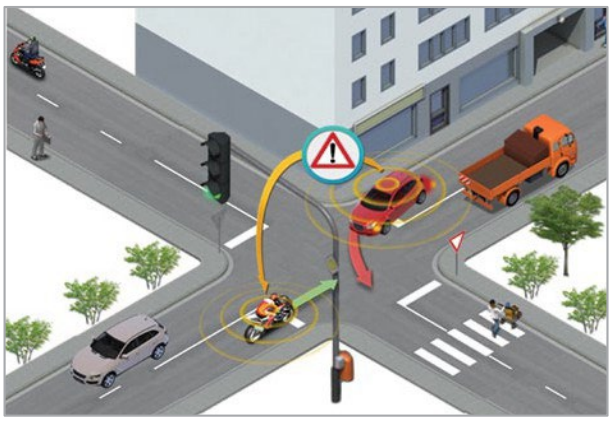
Use case scenarios developed by the CMC

The CMC is working on around 30 ‘use cases’ in which connectivity between vehicles would allow the possibility to warn drivers and riders of potentially dangerous situations. The use cases include motorcycle approach indication and warning features which help other vehicle drivers to detect motorcycles. The use cases also include dedicated applications for motorcyclists.



Motorcycle approach indication

MAI informs a vehicle driver that an approaching motorcycle is nearby, even if the driver cannot see the motorcycle.

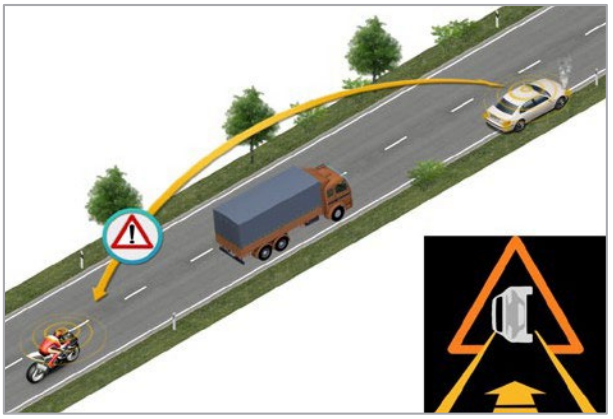


Motorcycle approach warning (left turn assist)

MAW checks if vehicle drivers overlook an oncoming motorcycle or incorrectly estimate its speed. It displays a warning to the driver if necessary.

Adverse weather warning

AWW warns the rider about critical weather conditions ahead, particularly when they are hard to perceive in advance: fog, wind gusts, black ice, heavy rain etc.



Broken down vehicle warning

BDVW warns that the motorcycle rider is approaching a vehicle with a defect that might be blocking a lane creating a potential safety.

Image source: C2C-CC toolkit

The CMC has made significant progress and breakthrough results have been achieved in motorcycle approach indication, motorcycle approach warning and Day 1 applications.

Moving into 2024, the Connected Motorcycle Consortium has entered its third phase nicknamed ‘CMC 3.0’. The focus for the coming three years will be on further research on both accident scenarios and simulation. In addition, standardisation and cooperation with other consortia and governments will continue.

Creating the conditions for market uptake of C-ITS

Certain C-ITS solutions may be suited for some types of models but not for others. Manufacturers implement technical solutions and optional features according to their vehicles’ needs, within a competitive business environment, ensuring that core functions and interoperability are preserved. The industry is also committed to guarantee that safety related C-ITS are interoperable between motorcycles and other vehicles.

C-ITS equipped motorcycles will soon be available in Europe, but in order to ensure market uptake it is essential to complete ongoing standardisation activities, validation and field operational tests. Cooperation with other players, including the automotive sector, infrastructure organisations and public authorities, especially with regard to investments in infrastructure and the deployment of a clear legal framework.

Cooperating with stakeholders in the field of C-ITS

ACEM works with stakeholders to ensure the successful deployment of ITS solutions in many ways. The industry actively participated in the European Platform for the Deployment of C-ITS, as well as in the Single Platform for open road testing and pre-deployment of cooperative, connected, automated and autonomous mobility to make sure that motorcycles are considered in the pre-deployment scenarios.

ACEM joined also the Connected, cooperative and automated mobility association (CCAM) representing the private side of the CCAM Partnership, bringing together 230 innovation stakeholders involved in the connected, cooperative and automated mobility field.

Moreover, ACEM manufacturers have been contributing to the work of the CAR 2 CAR Communication Consortium and liaised with other players such 5GAA.

eCall systems for motorcycles

In case of an accident the eCall systems have the potential to help riders using motorcycles mainly in rural and remote areas to communicate to relevant entities that an emergency occurred.

An eCall solution based on Third Party Service (TPS) has already been offered as optional for some years. Riders are also able to use some aftermarket products available on the market, such as smartphone APPs, or a rider based eCall systems (connected to helmets, jackets, or airbags).

The motorcycle Industry supports a diversified and flexible approach towards motorcycle eCall systems, which will be a strong enabler for future innovation. Vehicle based eCall systems require the consideration of certain motorcycle specificities.

Industry activities
Paving the way for the future deployment of 112 based In-Vehicle-Systems (IVS)

Between 2014 and 2017, a group of ACEM members participated in the European project I_HeERO, to investigate how an eCall system for motorcycles would work. The I_HeERO project concluded that an eCall for two- and three-wheeled vehicles significantly differs from the one used in passenger cars. The project therefore defined the minimum requirements for a motorcycle-specific eCall system, embedded in the vehicle.

On the basis of I_HeERO project recommendations, the industry worked together with public authorities to adapt the existing CEN standards. As a result, CEN/TS 17249-5 ("eCall for UNECE Category L1 and L3 powered two-wheeled vehicles") and the CEN/TS 17249-6 ("eCall for UNECE Category L2, L4, L5, L6 and L7 tricycles and quadricycles") were published in 2018.

The CEN technical specifications for eCall devices for motorcycles were assessed within the framework of the sAFE project. This EU co-funded initiative brought together industry players and Public Safety Answering Points (PSAPs) to carry out validation tests in various EU countries. The revision of technical specification TS 17249-5 has been promoted to "EN" standard level. The constant and pro-active industry participation made possible the creation of a standard tailored for L1&L3 category vehicles.

Public safety answering points (PSAPs) – standards for common interpretation needed to support future voluntary deployment to avoid false calls.

PSAPs should be able to handle a PTW eCall from all potential technology solutions (IVS, smartphone, TPS, aftermarket).
The Optional Additional Data (OAD) inside the standard Minimum Set of Data (MSD) are used to describe special characteristics of eCall vehicles other than M1/N1and require a common PSAP interpretation.

ACEM is open to further discussions on this matter with the European Commission and the eCall community in the context of the ongoing PSAP study by the EC.

Milestones in the deployment of C-ITS solutions for motorcycles

2014
ACEM commitment on safety cooperative ITS technologies.

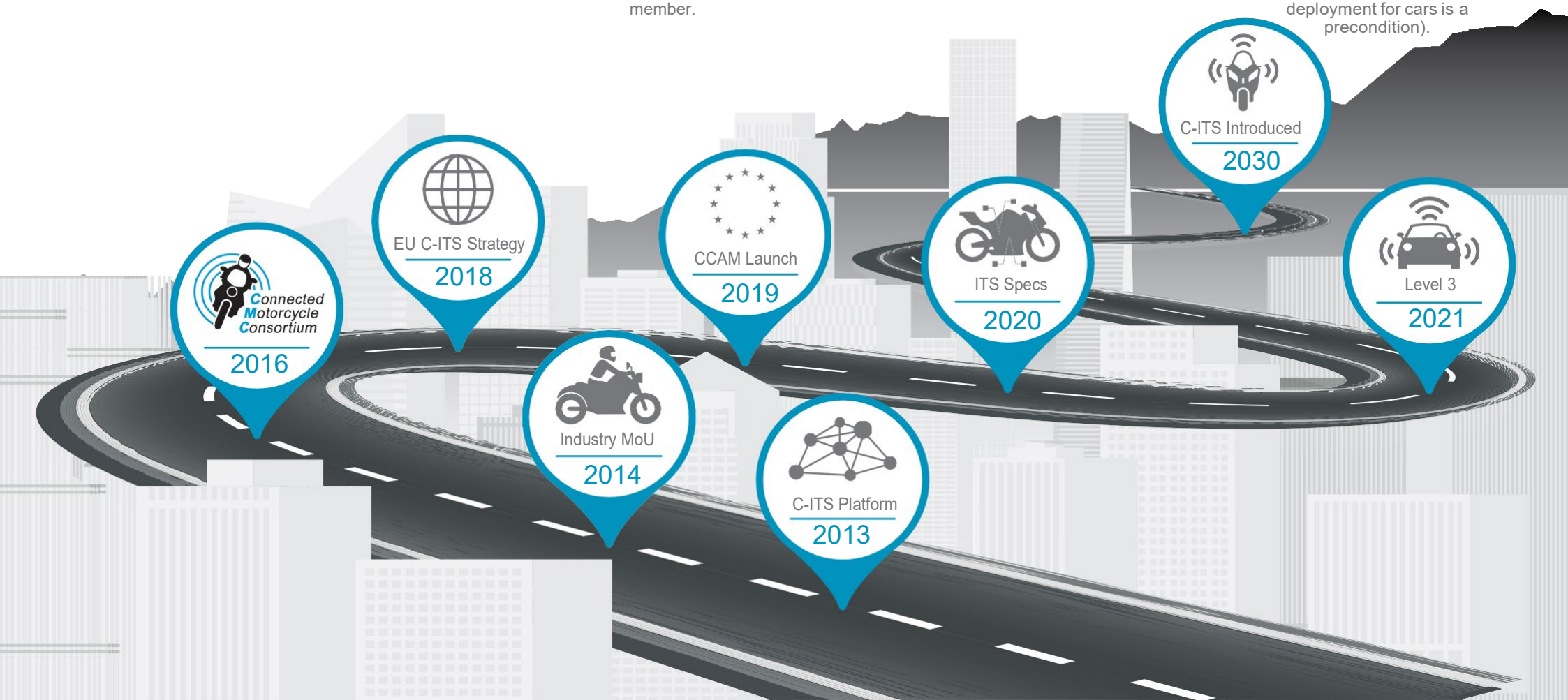
2016
Connected Motorcycle Consortium is created.

2019
Cooperative, Connected, Automated and Autonomous Mobility Single Platform (CCAM). ACEM participates as a member.

2020
Basic specifications for an ITS motorcycle system developed by CMC.

2021
Arrival of automated cars level 3 in Europe. Need to ensure adequate detection of motorcyclists.

2030
Estimated date of voluntary market introduction of C-ITS applications for motorcycles (C-ITS deployment for cars is a precondition).



Ensuring that ADAS and future automated cars are safe for all road users

Cars equipped with ADAS (advanced driver assistance systems) are able to detect larger objects, with a defined or standardised shape, such as cars, trucks and traffic signs. However, the detection of smaller dynamic objects such as motorcycles in general presents challenges to sensors and algorithms, just as it presents challenges to human perception.

Therefore, automated systems should strive to improve the detection rate of motorcycles. Statements such as, “the system may not detect small vehicles like motorcycles”, that can still be found in some driver handbooks, are simply not acceptable from a safety point of view.

Vehicles of automation level 3, will have to be able to recognise the complex manoeuvres commonly undertaken by motorcycles in ordinary traffic (e.g. lane utilisation, lean for cornering, lane splitting and weaving in traffic, etc.). Regardless of their degree of automation, passenger cars and other vehicles must be able to recognise motorcycles and their inherent complex manoeuvres and react accordingly.

The motorcycle industry calls on policy makers to address this safety issue as a matter of urgency. Advanced drivers’ assistance systems and future automated cars must be able to identify and react to motorcycles in a safe manner.

Moreover, both the car and motorcycle industries must learn from each other and continue to cooperate in order to increase safety for all road users. A good example of this cooperation is the MUSE project, implemented in 2019 by UTAC-CERAM. ACEM was involved in this initiative which defined specifications that a target must meet to be considered representative of motorcycles. The project also developed testing tools for the evaluation of the sensors’ performance and testing protocols.

Automated systems in cars that handle lane changes but do not detect motorcyclists can result in serious road accidents. Image source: C2C-CC toolkit

3 Motorcycling as a mobility solution. The need for more tailored safety policies.

Motorcycles are a solution to many transport and traffic challenges, particularly in urban settings. They offer real benefits in terms of reduced road congestion, improved air quality and affordable commuting. They can also help national, regional and local governments to meet strategic transport policy objectives.

The case for specific motorcycle safety strategies

European Union rules on type-approval of L-category vehicles are directly enforced by national administrations and strictly followed by the European motorcycle industry. This results in very high safety standards of all vehicles circulating in the EU.

In spite of this, considerable disparities in terms of road safety remain between EU Member States, as the ETSC (European Transport Safety Council) and the European Commission have pointed out on several occasions. The difference in safety levels for motorcyclists across the EU requires tailored and efficient motorcycle safety national strategies and specific interventions at national, regional and local levels[4].

Exchanges between policymakers and industry representatives are instrumental in improving motorcycle safety across Europe. ACEM and ANESDOR organised a joint conference on motorcycle safety in Barcelona.

4.See for example: European Commission. Road safety in the European Union. Trends, statistics and main challenges. Brussels, 2024. https://transport.ec.europa.eu/news-events/news/2023-figures-show-stalling-progress-reducing-road-fatalities-too-many-countries-2024-03-08_en

The importance of motorcycle friendly infrastructure

The quality of infrastructure is a vital element of road safety. Carelessly designed or poorly maintained infrastructure can not only damage vehicles but also put road users at risk. In order to make transport infrastructure friendlier to powered two-wheelers, ACEM members have developed, in collaboration with other stakeholders, specific infrastructure guidelines[5].

Further examples of best practices in infrastructure management can be found in the FEMA- ERF paper “Improving infrastructure safety for motorcycles”, which highlights the benefits of implementing cost-effective solutions for motorcyclists (adapted guardrails, skid resistance pavement, ensuring adequate maintenance of roads surfaces, etc.)[6].

Industry is actively collaborating with European and national authorities through its involvement in the EC Expert Group on Road Infrastructure Safety that will develop a guidance on the design of 'forgiving roads and roadsides', 'self-explaining and self-enforcing roads', and as well on quality standards and requirements of road infrastructure for vulnerable road users.

More and more European cities allow motorcycles to use taxi and bus lanes.
Copyright: Transport for London

In order to increase riders´ safety in urban areas, the motorcycle industry has advocated for adapting infrastructure (e.g. pedestrian crossings with less paint to prevent skidding, to convert the first car parking space before a pedestrian crossing into motorcycle parking spaces to increase the visibility, advanced stop lines, etc.) as well as allowing the use of bus and taxi lanes.

Currently, motorcycle access to taxi or bus lanes is allowed in several European cities including London, Birmingham, Madrid, Cordoba, Seville, Athens, Thessaloniki, Genoa, Bologna, Venice, Stockholm, among other European cities.

5. The ACEM “Infrastructure Guidelines Handbook” was prepared by industry experts, road and traffic engineers, and urban planners. They are available at https://www.acem.eu/wp-content/uploads/2012/05/PTWsaferoaddesigninEurope-final.pdf
6. http://www.fema-online.eu/website/wp-content/uploads/documents_library/ERF_FEMA_position_ptw_infra_2018.pdf

Adapting protective equipment to different needs

Personal protective equipment (PPE) varies depending on the type and use of a vehicle. Riders who use their vehicle in an urban environment require different protective gear to those who drive motorcycles in rural environments, at higher speeds or in off-road activities. As of 2016, the new EU Personal protective equipment regulation introduced a modular approach towards PPE, allowing riders to select garments according to their size, comfort and level of activity.

The motorcycle industry actively encourages riders to wear appropriate safety gear by promoting initiatives such as campaigns offering back protectors with new motorcycle purchases. These efforts are also supported by national industry associations, which work closely with clothing manufacturers, insurance companies and national administrations.

Further to this, the motorcycle industry has continued to carry out research with equipment manufacturers that has led to the development of new protective equipment products, including special clothing designed for hot climates and airbag jackets. Some motorcycle manufacturers have even designed and developed their own protective equipment, addressing riders' specific needs.

Moreover, the industry has been one of the main contributors to the technical work in PPE done at the European Committee for Standardisation (CEN). Industry efforts were instrumental in developing the EN 17092 standard for motorcycle rider protective clothing. This represents a major step in the development of high quality modular personal protective equipment for riders.

Also, the industry has contributed to the development of a new and better helmet standard. The Regulation ECE R22.06 will result in more resistant and safer helmets.

As of 2016, the new EU Personal protective equipment regulation introduces a modular approach towards PPE, allowing riders to select garments according to their size, comfort and level of activity.

Working together with national authorities to achieve better road safety results

Countries such as Sweden, Spain, Norway and the Netherlands have set up national motorcycle safety strategies that have helped them to achieve high motorcycle safety levels. Conversely, countries that adopt restrictive policies or simply ignoring motorcycling reduce awareness from other road users and put riders at higher risk.

For several years ACEM has organised a round of motorcycle safety events in Barcelona, Madrid, Warsaw, Milan and Paris to raise awareness about the importance of safety policies targeting motorcyclists. These meetings brought together experts from different organisations including public authorities from the ministries of transport and infrastructure, law enforcement authorities, representatives from different user organisations, road safety non-governmental organisations, transport research institutes and insurance companies.

The main objective of these events, which built on the work done in 2015, was to exchange experiences and good practices, and to identify opportunities for safety improvement, rather than prescribing off-the-shelf actions. Some of the key topics covered during the meetings included: motorcycle training, national regional and local motorcycling safety plans, infrastructure design and maintenance and enforcement of traffic regulations.

Several initiatives to improve motorcycle safety have been adopted as a result of this dialogue between key stakeholders. Other actions, although not directly a consequence of this country-specific approach, are fully supported by the sector.

The industry invites national authorities to work together to achieve better road safety results

Examples of initiatives to improve road safety across the European Union

Germany. In 2015, with the support of the German Ministry of Transport, the Industry association IVM has started the “Motorrad: Aber sicher!” (“Motorcycle: but safe!”) project on the Facebook community platform named “VivaLaMopped”, which developed into an online encyclopedia on motorcycle safety for riders and professionals. The project was expanded to the Instagram and TikTok platforms. The short videos adapted to the viewing habits of the target group of young people were viewed over 10 million times on TikTok alone in 2023.

Italy. Thanks to the efforts of ANCMA-Confindustria, the motorcycle industry association, the national road law, Codice della Strada, has been modified to recognise motorcyclists as Vulnerable Road Users alongside with pedestrians and cyclists, ANCMA also monitors how the local administration prioritises PTW safety actions within the urban mobility plans by a yearly survey designated of all the major Italian cities.

Netherlands. Relevant stakeholders (the Ministry of Transport, Police, the SWOV research institute, users’ organisations, RAI - the industry’s national association, the dealer organisation BOVAG, the Dutch Vehicle Authority RDW and road authorities) joined forces in “Motorplatform”. In 2018, they published the Dutch Motorcycle Safety Action Plan that includes recommendations on safety campaigns, training, infrastructure and ITS. The latest updated safety action plan was published in 2023.

Spain. ANESDOR, the Spanish motorcycle industry association, and the Catalonian Traffic Service launched the first edition of 3.0 Training in 2015. Since then, 9 editions aiming at improving motorcyclists’ riding skills. have been implemented in different parts of Catalonia with the participation of more than 5,000 riders. In 2023, a new 'Urban Training 3.0' format was introduced. specially designed for training staff using motorcycles to carry out their work duties and urban commuters in general. Other regions have already shown interest in implementing this programme.

ANESDOR and traffic authorities work together to improve motorcyclists´ riding skills through the Training 3.0 project

A continuous commitment to improving road safety across Europe

The industry will continue working with stakeholders at national level to improve motorcyclists' safety across Europe. Moreover, the sector will continue to support all the initiatives that promote riders' safety in the different European countries.

Exchanges between policymakers and industry representatives are instrumental in improving motorcycle safety across Europe and beyond.

International Transport Forum virtual workshop "Riding in a safe system", June 2021

As a follow up of the Third Global Ministerial Conference on Road Safety, the International Transport Forum, the Swedish Transport Administration, the Swedish National Road and Transport Research Institute, the International Motorcycling Federation, IMMA and ACEM and its members organised a virtual workshop on PTW Safety[7]. The workshop was held over several days and involved more than 150 experts from all regions in the world. Eight priority actions for policy makers were prepared to effectively include and improve safety of PTW riders in their regional, national, or local road safety policy activities.

International Motorcycle Road Safety, Conference, Zaragoza, Spain, 2024

The conference was hosted by ACEM member ANESDOR and the Dirección General de Tráfico (DGT) involving ACEM and its members. More than 400 experts from public institutions, industry, research centres, users and infrastructure operators from different continents shared different perspectives on motorcycle safety[8]. The conference also included an interactive exhibition, demonstrating vehicles, personal protective equipment and safety and mobility technologies. FIM awarded the event as the "2024 Best Road Safety and Public Affairs Action". The second edition of the Conference will be held in 2026.

Innovative vehicles and other safety related technologies and equipment were on display at the event organised by ANESDOR and DGT.

7. https://www.itf-oecd.org/motorcyclists-safety-workshop-riding-safe-system-closing-plenary
8. https://motorcycleroadsafety.com/

International Motorcycle Safety Conference, Cologne, Germany

ACEM has a longstanding partnership with the Institute for Motorcycle Safety (Institut für Zweiradsicherheit e.V., ifz). ACEM supports the organisation and contributes to the biannual conference[9], considered the world's leading platform for the exchange of motorcycle safety research. The 15th edition of the International Motorcycle Safety Conference, bringing together global safety experts and researchers, was held in 2024. As partners of the conference, ACEM led a special session titled *"Riding Together to the Future"*, where speakers presented the Motorcycling Manifesto, the industry's Vision 2030+, and the latest innovations in connected riding and future assistance systems.

The *"Riding Together to the Future"* session focused on the industry's commitment to road safety by advancing vehicle safety technologies, promoting sustainable transport policies, investing in safer road infrastructure, and encouraging responsible road user behaviour.

ACEM representatives chaired a session where different stakeholders presented new safety features from around the world.

9. IMC 2024 – Special Session „Riding together to the Future" – Institut für Zweiradsicherheit

The European Motorcycle Training Quality Label

European Motorcycle Training Quality Label helps motorcyclists to identify the best post-licence training programmes in their countries. The Quality Label is granted to programmes delivered by training schools that have undergone a rigorous and objective evaluation. This helps motorcyclists to ensure that they will get only the very best motorcycle training available.

Better training, safer riding

The human factor is one of the most critical factors in accidents involving motorcycles. For this reason, the motorcycle industry is supporting life-long rider training for new and experienced motorcyclists, including pre-licence and voluntary post-licence training schemes.

Pre-licence training provides the basic skills and awareness needed for novice riders to use their vehicles safely on the road. Subsequently, advanced post-licence courses offer riders additional opportunities to increase their proficiency and safety as well as practice their hazard perception and risk awareness skills.

Post-licence training plays a key role in improving road safety, particularly for people who are upgrading to a more powerful motorbike, who are returning to riding after an extended period of time or for those who want to improve their riding skills and perception abilities. For many years, ACEM members have been offering high quality, tailored voluntary training options across the EU.

Launched in 2016, the European Motorcycle Training Quality Label has certified 36 motorcycle training programmes in Austria, Belgium, France, Cyprus, Germany, Greece, Italy, the Netherlands, Portugal, Spain and Sweden.

The European Motorcycle Training Quality Label

Most of the training courses available across the EU, both at pre- and post-licence level, vary considerably across countries and schools due to different training requirements, specific vehicle use and the different levels of trainers qualifications, among other factors. Moreover, the quality of the thousands of different training schemes across the EU is heterogeneous and as there are so many options available, it is difficult for riders to identify the best ones and make informed decisions.

In order to address this information challenge, ACEM, the German Road Safety Council (DVR), and the International Motorcycling Federation (FIM) joined forces and launched the European Motorcycle Training Quality Label in 2016. The Label helps riders to clearly and easily identify high- quality post-licence training offers in their countries.

To learn more about the European Motorcycle Training Quality Label please visit:
https://motorcycle-training-label.eu/

Improving motorcyclists' safety across Europe: Results

To date 36 training programmes operating in Austria, Belgium, France, Cyprus, Greece, Italy, Germany, the Netherlands, Portugal, Spain and Sweden have been certified. Riders are now well-informed about the best training offers in these countries.

The figures below show the impact of some of the labelled programmes on motorcycle training:

- The Swedish Association of Motorcyclists (SMC) trained more than 10,000 motorcyclists in 2023.

- ADAC trained about 21,500 motorcycle riders in Germany in 2023.

The Label helps riders to clearly and easily identify high- quality post-licence training offers in their countries.

Institutional stakeholders supporting the Label: Recognition at EU level

In 2018 the European Transport Safety Council, a prominent NGO in the field of road safety in Europe, acknowledged the importance of this initiative and joined the European Motorcycle Training Quality Label consortium as a supporter member.

In 2019, The European Commissioner for Transport, Violeta Bulc, released a video message that acknowledged the key role played by the European Motorcycle Training Quality Label in improving motorcyclists' safety across Europe, saying: "We are grateful that the European Motorcycle Training Quality Label has been set up, responding to our call for voluntary commitments."
The same year, the European Motorcycle Training Quality Label received the European Commission Road Safety Charter Award, in the category "voluntary commitments". The award acknowledges inspirational and innovative initiatives that contribute towards improving road safety and saving lives on Europe's roads.

"The European Motorcycle Training Quality Label has been strongly supported by the European Commission. Indeed, high-quality safety training is a fundamental element in the Safe System approach." Adina Valean, former European Commissioner for Transport, 2020.

In 2024, the European Road Safety Charter highlighted the importance of the industry initiative at the event "Enhancing road safety for motorcyclists".

The Label is an excellent example of how cooperation between industry, NGOs, motorcycle trainers and user organisations can deliver positive results in motorcycle safety. The European Motorcycle Training Quality Label also creates a strong incentive for training centres to distinguish themselves. It stimulates them to raise their quality standards, which will result in better safety training across Europe.

In October 2019 the European Motorcycle Training Quality Label received the Road Safety Charter Award

National and local authorities acknowledging the Label – good examples

- The Netherlands – local authorities in some regions are financing the safety training courses and the rider pays only 50€ to attend the certified training.

- Belgium – the Flemish government covers 45% of the cost of the certified training courses.

- Austria – the regional authority in upper Austria support financially the riders undergoing certified voluntary training with 75€.

Private companies endorsing the awarded programmes - incentives for riders

- Cyprus – thanks to the private company sponsorship 17- and 18-year-old riders go through the training free of charge. The other trainees pay only 20 € for undergoing certified safety training provided by the national motorcycle federation.

- Greece – the Insurance companies provide 25% discount to riders attending courses offered by the Hellenic Motorcycle Institute.

Paving the way to high quality standards for motorcycle training

In the medium and long-term the European Motorcycle Training Quality Label will increase the visibility of the best training programmes available, paving the way towards higher quality standards for training in Europe.

Industry ultimate goal is to increase the number of riders attending voluntary safety-oriented courses and thus improve riders' safety performance in the European Union.

In 2023 all 36 schools awarded the European Motorcycle Training Quality Label and academia joined forces to prepare for a new high-quality training toolbox to address the most relevant and frequent powered-two wheelers accident scenarios.

The toolbox represents a natural evolution of the European Motorcycle Training Quality Label especially thanks to the united endeavors of training experts and academia, namely: Ludwig Maximilian University of Munich – LMU, Würzburg Institute for Traffic Sciences – WIVW, Institute for Motorcycle Safety – ifz, Traffic accident research at TU Dresden – VUFO and the Austrian Road Safety Council – KFV.

This tool will be offered free of charge to all training schools interested in improving the quality of their post-licence courses. To ensure a larger deployment, it will also be shared with bodies planning to set up voluntary motorcycle safety training programmes in countries with limited current training options.

EUROPEAN MOTORCYCLE TRAINING QUALITY LABEL

DVR Deutscher Verkehrssicherheitsrat

EUROPEAN QUALITY LABEL

APPROVED AND CONTROLLED TRAINING

MOTORCYCLE SAFETY

SUPPORTED BY

ACEM The Motorcycle Industry In Europe

FIM

What is the European Motorcycle Training Quality Label?

- Voluntary certification scheme for post-licence training programmes in Europe.
- Helps motorcyclists to easily identify the best safety training programmes in their countries.
- Operated by German Road Safety Council, European Association of Motorcycle Manufacturers, and International Motorcycling Federation.

Institutional recognition

- Endorsed by the European Traffic Safety Council (ETSC).
- Received the European Road Safety Charter Award.
- Strongly supported by the European Commission.

"The European Motorcycle Training Quality Label has been strongly supported by the European Commission. Indeed, high-quality safety training is a fundamental element in the Safe System approach."

Adina Valean, European Commissioner for Transport

How does the Training Quality Label work in practice?

- Training programmes must pass a rigorous assessment including an inspection on-the-spot.
- Annual evaluation visits ensure that the programme is delivered according to the highest standards.

For more information:
https://motorcycle-training-label.eu

Excellent example of joined efforts

The Label positively shows how cooperation between industry players, NGOs, motorcycle trainer and users' organisations can deliver well-tailored efficient safety initiatives.

36 Number of training programmes certified

11 MS - Austria, Belgium, France, Cyprus, Germany, Greece, Italy, the Netherlands, Portugal, Sweden, and Spain

5 Policy recommendations

1. General policy recommendations

Improving data gathering and research

- In-depth and naturalistic studies should be encouraged and implemented at European, national, regional and local levels. These studies provide valuable and detailed insight into normal riding tasks, near-missed accidents and accident causation factors.
- National authorities should collect exposure data to develop sound motorcycle safety policies, in line with recommendations made by the European Road Safety Observatory.
- This would allow public authorities to devise more effective safety measures to minimise the risk of accidents as well as realistic policy objectives.

Developing inclusive motorcycle policies

- Whilst vehicle safety has significantly improved over the years, and further developments are likely to follow as safety technologies evolve, a durable solution to motorcycling safety requires the involvement of public decision makers.
- Countries such as Sweden, Spain, Norway and the Netherlands have set up national motorcycle safety strategies that have helped them to achieve high motorcycle safety levels. Other European countries should adopt a similar approach. Adopting restrictive motorcycle policies or simply ignoring motorcycling, reduce the awareness of other road users and put riders at higher risk.

Public authorities must adopt transport policies that acknowledge the role of motorcycles in urban and leisure mobility across Europe.

2. Infrastructure-related recommendations

Adapting road infrastructure to motorcyclists' needs

- Road infrastructure is at the core of road safety, especially for motorcyclists. Policy makers need to ensure that infrastructure is well maintained and invest in the necessary resources to create a safer environment for all types of road users, particularly for vulnerable road users such as motorcyclists.

- Consideration of motorcycle safety at the road design stage is essential to ensure that infrastructure is motorcycle friendly. Relevant aspects of well-designed infrastructure include good motorcycle visibility, obstacle free zones, use of appropriate road surface materials and predictable road geometry.

- The characteristics and infrastructure requirements of motorcycles should be part of the basic training of road designers, and highway and traffic engineers. The standardisation of data collection procedures for infrastructure-related accidents and the identification of sections with high accident concentrations can also help to reduce the number of serious and fatal accidents involving motorcycle riders.

- The network-wide safety assessment (safety ratings) should have been carried out by Member States by end 2024 in accordance with the revised EU Road Infrastructure Safety Management Directive. In a recently agreed revision of EU infrastructure safety rules, the EU has mandated risk mapping and safety rating for roads of the strategic Trans-European Transport Network (TEN-T), motorways and primary roads, with a specific focus on vulnerable road users including motorcyclists.

- The Safe System approach to road engineering involves matching road function, design, layout and speed limits to accommodate human error, so that that crashes do not lead to death and serious injury.

The Safe System approach to road engineering involves matching road function, design, layout and speed limits to accommodate human error in a way that crashes do not lead to death and serious injury.

3. Human factor-related recommendations

Encouraging high-quality post-licence training

- Safe vehicles must be driven safely. Public authorities should encourage riders with appropriate incentives to undergo voluntary post licensing training in order to keep their skills honed to a high level.

- Post-licence training plays a key role in improving road safety, particularly for people who are upgrading to a more powerful motorbike or who are returning to riding after an extended period of time. A list of some of the best post-licence training programmes is available at: https://motorcycle-training-label.eu/

Combining educational campaigns and effective law enforcement

- Higher compliance with speed, alcohol, licence and mobile use legislation can also bring substantial road safety benefits. The importance of achieving high levels of correct helmet wearing cannot be over emphasised.

- Failing to see an approaching motorcycle is one of the most common errors. Training programmes for all types of licences should actively promote awareness about motorcyclists amongst other road users.

- Campaigns encouraging car and lorry drivers to pay attention to motorcyclists on the road can also make a positive contribution to improve road safety in Europe.

Motorcyclists must be encouraged by public authorities to follow voluntary post-licensing training programmes to improve their hazard perception and risk awareness cognitive skills.

4. Vehicle-related recommendations

Ensuring that automated technologies and vehicles are safe for motorcyclists

- Decision makers must ensure that advanced driver assistance systems (ADAS) and future automated vehicles adequately detect all road users, including motorcyclists.
- Automated systems and automated vehicles that do not always detect motorcyclists can lead to serious road accidents and to an increase in motorcycle fatalities.

Ensuring that vehicles are properly maintained

- Defective or poorly maintained vehicles can lead to a higher safety risk. However, only half of the EU Member States have set up compulsory periodic technical inspections for motorcycles. The upcoming revision of the roadworthiness package by the European Commission is an opportunity to effectively tackle those aspects.
- The establishment of these mandatory safety checks in these countries would enhance the maintenance and repair of vehicles, prevent safety failures due to inadequate maintenance (e.g. failures or poor condition of lighting, tyres or braking systems) and, although partially, assist in the prevention of irresponsible tampering.
- National governments should reinforce roadside inspections of all vehicles in order to identify vehicles which could represent a hazard to traffic safety, when relevant safety requirements or vehicle conformity are not fulfilled.

EU Member States have to set up compulsory periodic technical inspections for motorcycles.

Safe System approach towards motorcycle safety

6 Conclusions

There are about 40 million motorcycles on Europe's roads. This number can be expected to continue growing in the coming years, probably at a faster rate as a response to urban mobility challenges in Europe. For this reason, it is essential to develop sound and inclusive transport and safety policies that fully take motorcycling into account.

Europe is moving towards connected and automated mobility. Future traffic mix should cater for the needs of vulnerable road users including motorcyclists. Regardless of their degree of automation, passenger cars and other vehicles must be able to recognise motorcycles and their inherent complex manoeuvres and react accordingly.

ACEM is convinced that advanced vehicle technology, including new ITS solutions, can make a valuable contribution to motorcycle safety, but this is not enough. Well-designed and properly maintained infrastructure as well as responsible and well-trained road users are also part of the solution. Only a genuinely safe system approach to motorcycle safety can deliver tangible and long-lasting safety improvements.

All stakeholders including policy makers, public authority, industry and user organisations are part of the solution. By working together, it will be possible to create a safer environment for motorcyclists across Europe.

The motorcycle industry fully supports the 4th Global Ministerial Conference on Road Safety declaration calling leaders and experts to accelerate action towards the Sustainable Development Goals' target of halving global road deaths by 2030.
In line with the United Nations High-Level Political Forum's pledge Member States should set targets to reduce fatalities and serious injuries, for all groups of road users and especially vulnerable road users such as pedestrians, cyclists and motorcyclists and users of public transport.

7 ACEM Members

Manufacturers

BMW MOTORRAD

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Kawasaki
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National Associations

arge2Rad
Austrian Motorcycle Association
AUSTRIA

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