SUOMEN MOTORISTIT ry – DIRECTION OF ACTIVITIES RELATED TO INTELLIGENT TRANSPORT

OPERATION OF SUOMEN MOTORISTIT ry (SMOTO)

The Purpose of the Operation of Suomen Motoristit ry

Suomen Motoristit ry is a national umbrella organization for motorcyclists and represents their interests by influencing the decision-making and public opinion. Suomen Motoristit ry maintains and develops international cooperation with other motorcyclist organizations.

With regard to intelligent transport solutions, SMOTO participates in projects, various steering groups, committees, and task forces, acts as the Finnish expert organization on motorcycling-related matters, issues statements on the proposals made by authorities, and initiates research, development, legislative and other motorcycling-related actions.

SMOTO represents the interests of all Finnish motorcyclists with regard to activities related to intelligent transport research, development, and innovations.

The Vision of Suomen Motoristit ry

SMOTO is regarded highly as a national and international expert on motorcycling and is a popular collaborator.

SMOTO is an innovative, impartial, pro-active, and responsible developer of motorcycling, that takes an active role in promoting the interests of all Finnish motorcyclists and motorcycling in general.

INTELLIGENT TRANSPORT SOLUTIONS IN GENERAL

Intelligent transport is considered to include stand-alone, connected, cooperative solutions. The stand-alone solutions are localized within the vehicle itself and only use the solutions available in the vehicle or are part of the road infrastructure and only use the solutions present within the infrastructure. The connected and cooperative solutions utilize solutions that are located in the vehicle and the road infrastructure and the solutions transmit information to and from other vehicles and/or road infrastructure devices.

Intelligent transport solutions are generally considered to have a positive impact on the safety and fluidity of traffic, the development of the traffic system, the production, collection, and refinement of information, as well as the production of information services to the road users. Intelligent transport solutions are designed, researched, tested, and implemented on all continents and within all traffic cultures. The current traffic system is generally expected to develop toward an improved traffic future through the use of intelligent systems, open data, and digitization.

> » SMOTO endorses these principles.

The objective of intelligent transport is to provide safer control of vehicles, improve the operation of the traffic system, increase the energy efficiency, and reduce the detrimental effects on the environment.

Against this background, it must be noted that intelligent transport solutions are primarily designed and developed based on the needs and requirements of car traffic. The design, protection, policies, and usability of the intelligent transport solutions are based on a context specified by cars.

> » SMOTO considers motorcycles to be a sustainable part of the traffic system and an alternative to cars, which can be used to satisfy the citizens' needs regarding safe and reliable mobility on road networks that are increasingly susceptible to congestion.

The distinctions between motorcycles and cars should be emphasized in connection to all aspects of intelligent transport. The differences go beyond the obvious factors of the number of wheels, size, weight, speed, acceleration, and handling. Significant differences include steering (for example counter steering, the effect of the tire profile), lack of protection (for example collisions, weather, falling down), friction surfaces against the riding surface (for example the contact surface of the tires vs. friction), the front end geometry (front wheels vs. front fork), kinematics, (motion, motion under acceleration, and rotation; spinning gyro and spinning wheels), and dynamics (the impact of forces on the movement; for example tilting).

> » SMOTO emphasizes the fact that sensors and actuators developed for cars are not, in principle, suitable for use in motorcycles.

> » SMOTO demands that intelligent transport solutions installed on motorcycles, or those meant to be used with motorcycles;
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> - Must be developed, designed, and implemented to respond to the needs, requirements, and restrictions of motorcyclists.
> - Take into consideration the requirements and restrictions related to motorcycling and are suitable to the operational environments and conditions of motorcycles with regard to their features and usability.

SMOTO's position on intelligent transport solutions in general

In principle, SMOTO endorses intelligent transport solutions, whose design and implementation has considered their necessity, suitability, usability, and safety from the perspective of motorcycling and motorcyclists.

SMOTO calls for the needs of motorcyclists to be taken into consideration in the design, development, and implementation of traffic management and control systems based on intelligent transport to ensure that motorcycles are not neglected by default.

SMOTO opposes intelligent transport solutions that remove the control of the motorcycle from the rider.

SMOTO opposes the use of intelligent transport solutions for unjustified surveillance.

PHENOMENA AND DEVELOPMENTS

Regarding the developments of the near future, SMOTO endorses, with reservations, the wide implementation of intelligent transport solutions insofar as their use is voluntary and does not incur unnecessary additional expenses to the motorcyclists themselves. Intelligent transport solutions provide a possible direction toward the improvement of traffic safety and mobility from the perspective of motorcyclists. SMOTO looks at the features, functions, and usability of all such intelligent transport solutions, systems, and devices that are intended to be installed (and used) on motorcycles, other vehicles, the road infrastructure, and/or communication and data transfer solutions.

Opinions on the acceptability of intelligent transport solutions

Intelligent transport solutions pertaining to motorcycles are often seen as having an effect on the aspects related to riding, movement, and the riding environment.

The operation of SMOTO will emphasize areas under development and in testing as well as those being implemented that are related to riding, moving, and the environment, and the intelligent transport contained therein.

> » SMOTO demands that:
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> - The installation and usage of intelligent transport solutions on motorcycles is not mandatory and that they can be switched off.
> - For vehicles used on the road, only such intelligent transport solutions whose design and development also takes into consideration the more vulnerable road users, such as pedestrians, cyclists, and motorcyclists, and which also take note of vehicles without similar equipment are acceptable.
> - Intelligent transport solutions do not impose unnecessary or unreasonable expenses to motorcyclists.

- **Traffic safety and traffic accidents with regard to motorcycling**
  SMOTO takes the traffic safety of motorcyclists seriously. Ultimately, motorcyclists are personally responsible for their safety. To support this, SMOTO produces impartial and easily accessible information. SMOTO is an active promoter of the developmental work related to the traffic safety of motorcyclists.

  The related intelligent transport solutions include:
  - Advanced rider assistance systems (ADAS):
    - Independent systems: cornering ABS, traction control (TCS), lane departure warning (LDW), forward collision warning (FCW), adaptive cruise control (ACC), electronic engine and equipment management systems (*X-by-Wire*)
    - Connected systems: intelligent traffic systems, robot technologies of the future, automated vehicle control
    - Collaborative systems: cooperative navigation (C-Navi), cooperative adaptive cruise control (C-ACC)

» SMOTO opposes intelligent transport solutions which are used to restrict the handling and/or performance of the motorcycle.

» SMOTO demands that advanced rider assistance systems cannot claim control of the motorcycle to such extent that the rider is not in control of all dynamic driving tasks, such as braking, acceleration, leaning, swerving, and/or turning. These systems cannot be coercive; automated emergency or forceful stopping methods are not acceptable. Emergency brake-power assist units may be allowed.

These solutions are included in SAE Level 2 for automated driving systems.

Note: does not include ABS/CBS brake systems or traction control systems, which are non-coercive or not considered ITS devices.

- Black spots:
    - Connected: the dynamic monitoring of data related to black spots (accidents and their categories), necessary situational warnings, enhancement of road lighting in hazardous areas and accident sites as vehicles approach, etc.
- Infotainment services:
    - Connected:
        - Information services: road condition, surface, weather, accident reports
        - Value-added services, such as scenic routes, twisty routes, fast routes, congestion-free routes
        - Social media and big data therein, open data, "My data"

» SMOTO demands that warnings and data management pertaining to black spots as well as infotainment services are implemented in a manner that does not cause unnecessary distractions to the rider or excessive flow of information in the current situation at each time.

» SMOTO sees that warnings and information services can provide information, issue warnings or, when necessary, attract the attention of the rider.

(Compare with the above)

» In SMOTO's opinion, collecting, storing, and processing data that would breach the data security or privacy of the user, or data that would require maintaining a personal data register cannot be allowed on social media or within big data without the express consent of the motorcyclist.

» SMOTO demands that all intelligent transport solutions – such as connected and cooperative services as well as those including reservation data and/or payment traffic – must be implemented in a manner that ensures that the services used and the confidential information pertaining to the user are kept separate and beyond the reach of third parties in

- Traffic monitoring:
  - Connected and/or cooperative:
    - driving speed, location,
    - identity of the driver, driving license,
    - the condition of the driver and/or vehicle
    - restrictive devices, such as Intelligent Speed Adaptation (ISA), alcolock
    - driving subjected to restrictions (based on time, area, vehicle, etc.);
    - fault detection while driving and fault tolerant solutions (intelligent devices do not cause dangerous situations when malfunctioning);
    - contactless/remote controlled: telemonitoring, remote diagnostics, remote monitoring, stolen vehicle tracking.

» SMOTO opposes intelligent transport solutions that are used or can be used for any form of surveillance of road users by the authorities or third parties.

» SMOTO endorses intelligent transport solutions that facilitate everyday moving and performance in traffic. These solutions include, for example, electronic driving licenses, vehicle licenses, and insurance certificates.

» SMOTO endorses <u>voluntarily</u> installed alcolocks, remote controlled defeat devices that prevent unlawful appropriation, and stolen vehicle tracking on motorcycles. Stolen vehicle tracking is subject to the decision of an authority to ensure the legal protection and protection of privacy of the driver.

» SMOTO endorses <u>voluntarily</u> installed unidirectional remote diagnostics, where status and/or error codes are sent from a bus of a motorcycle to a trusted destination for locating, identifying, rectifying and/or resetting the fault. The data transfer can only be initiated from the motorcycle.

» SMOTO opposes all forms of remote and telemonitoring pertaining to the location, use, and user of the motorcycle.

- **Instructor and rider training, development and promotion thereof:**
  SMOTO works toward motorcyclists having access to a wide range of high-quality riding training at a reasonable cost. SMOTO coordinates the development of-
  The training of domestic motorcycling trainers. Riding training is developed in such a way that it takes the motorcyclist's personal qualities and learning abilities into consideration along with the technical development of motorcycles. The related intelligent transport solutions include:
  - Training and education methods:
    - PTW riding simulator (incl. leaning, counter steering, braking while turning)
  - Intelligent transport solutions and devices:
    - Operational training, educational materials
    - Collection and distribution of training and accident history

> » SMOTO endorses the development and implementation of PTW riding simulators used for riding training and discipline-specific training for the purposes of obtaining a driving license. When necessary, it should be possible to familiarize students with riding and provide basic education with a PTW riding simulator.
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> » SMOTO endorses the development of training materials and environments for PTW riding simulators that are relevant to the implementation and increased use of intelligent transport solutions. In this case riding training and the learning and education pertaining to the related intelligent transport solutions can also take place outside of the riding season.

- **Traffic infrastructure and motorcyclist-friendly road infrastructure:**
  Roads that are safe to motorcyclists are safe to everyone. SMOTO demands that motorcycles are accepted as an equal part of the traffic system. The safety of motorcyclists, like that of other road user groups, must be taken into consideration in all development, design, implementation, and impact assessments related to traffic. The related intelligent transport solutions include:
  - Traffic control:
    - Connected and cooperative:
      - transmitting country-specific traffic sign and traffic rule information to the vehicle and the driver in their native tongue,
      - the use of road infrastructure equipment and devices to transmit traffic and weather data (V2I data transfer),
      - the use of traffic, weather, condition, and congestion data for route planning,
      - providing information on alternate routes,
      - the use of road lighting to indicate the correct route/turns, - the creation of real-time data pertaining to the state of traffic and transmitting it to the vehicles and the driver

> » SMOTO endorses making country-specific traffic rule information available to motorcyclists before the journey and during it.
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> » SMOTO endorses making dynamic traffic data and other data available to motorcyclists and accessible for use in various ITS services.

- **Insurances and taxation of motorcycles:**
  Reforming the Motor Liability Insurance Act opens the possibility of introducing new types of insurance products to the market. The current vehicle-specific insurance system is cumbersome and expensive for motorcyclists with more than one motorcycle in road use. The solution to this is a rider-specific vehicle insurance. It is SMOTO's opinion that the impact of riding training on the occurrence of accidents should be verifiable, thus facilitating the development of voluntary supplementary training of motorcyclists.

The taxation of motorcycles should be reformed in such a way that it was completely based on usage. The car tax on motorcycles should be eliminated completely and a vehicle tax should not be implemented. Motorcycles should not be subjected to user fees or road tolls. Emissions or specific consumption for type approval may be used in estimating the detrimental effects on the environment.

The related intelligent transport solutions include:
- Personal accident history:
  - Connected: Updates to the accident history and browsing personal information
- Verifying obligations related to road use
  - Tax and insurance payments
  - Emission levels
  - The traffic-use status of a motorcycle (decommissioning from traffic use)
  - Personal vehicle insurance and electronic insurance certificate

» In SMOTO's opinion, the insurance policies of a motorcycle should be based on the user's personal accident history. For this reason, SMOTO endorses the collection, distribution, and usage of personal accident history as a basis for insurance payments.

» SMOTO endorses on-the-road traffic monitoring that can be used to replace mandatory vehicle inspections. The payment, insurance, emission, and noise level information for a vehicle is available in the registers maintained by authorities.

» SMOTO opposes the collection of detailed (time, place, speed, driving behavior) information in data systems. The collection of summation and accumulation data may be acceptable under some conditions.

- **Technical solutions and the services that utilize them:**
  SMOTO is a significant national expert on motorcycling that provides information, issues statements, concludes investigations, and publishes reports on the various aspects of motorcycling. SMOTO cooperates internationally to develop the technology and traffic safety of motorcycles from the perspective of motorcyclists. The new technical systems being developed include, among others, vehicle-specific equipment for the 112 eCall emergency service and digital conspicuity for vehicles, which can be implemented using radio or visible light frequencies.

  All technical solutions comprise a user interface and usability factors. The motorcycle is a highly challenging usage environment for retrofitted devices: there is very little room or protected installation points, devices are exposed to extreme weather conditions, water, dust, and vibration.

  The related intelligent transport solutions include:
  - Emergency services:
    - Connected: 112 eCall emergency service, a sensor array that can be used recognize motorcycle accidents or falling down at speed.

Motorcycle manufacturers are drawing up specifications for a minimum viable implementation for a reliable 112 eCall device and the related data transfer channel that could be installed on a motorcycle.

> » SMOTO endorses further research, development, and testing regarding the 112 eCall emergency service. The installation of 112 eCall devices on motorcycles is possible under certain conditions. The 112 eCall system cannot impose equipment or installation costs to motorcyclists that are higher than the corresponding costs pertaining to cars. The implementation should take place on voluntary basis.

- Digital conspicuity:
    - Connected: transferring data related to the location and driving direction of the vehicle when encountering another vehicle and when the driving directions cross over (*Vehicle-2-Vehicle Communication, Digital Conspicuity*)
- User interfaces:
    - Independent/Connected: Head-up display (HUD) within the helmet, audio-visual data within the helmet, riding equipment, and/or the motorcycle, haptic devices (data transmitted using the sense of touch) integrated into the riding equipment, helmet, and/or the motorcycle.
    The data can be informative, directive (action/reaction), advisory (suggesting an action) or coercive.

    The user interface must present the information safely, in an illustrative, unambiguous, intelligible, logical, and representative manner, using a format that is based on widely studied standards and/or best practices.

> » SMOTO endorses further research, development, and testing regarding digital conspicuity. The equipment is based on flashing LED headlights faster than the eye can observe, which enables transmitting data with a standard format and content between vehicles (cf. Morse code). Vehicle to vehicle (V2V) transfer of data using radio frequencies should also be researched and tested thoroughly with motorcycles.

The following page includes a summary of SMOTO's opinions regarding intelligent transport solutions.

Suomen Motoristit ry – SMOTO

SUMMARY

SMOTO is an active, innovative, and reliable partner on matters pertaining to motorcycles and road traffic.

SMOTO recognizes the opportunities provided by intelligent transport solutions and their impact on motorcycling, motorcycles, and motorcyclists.

SMOTO endorses further research, development, innovation, and testing regarding intelligent transport solutions.

SMOTO emphasizes the fact that intelligent transport solutions cannot be allowed to impose unnecessary or unreasonable expenses to motorcyclists.

SMOTO emphasizes the fact that sensors and actuators developed for use in cars are not, in principle, suitable for use in motorcycles. The design, research, development, and innovations related to intelligent transport solutions intended for use with motorcycles must consider the needs, requirements, and restrictions of motorcyclists, as well as the dynamic and kinematic characteristics of motorcycles along with their uses and usage environments.

SMOTO demands that the implementation and use of intelligent transport solutions on motorcycles is not mandatory and that the solutions can be switched off. SMOTO endorses 112 eCall systems, alcolocks, remote controlled defeat devices that protect against unauthorized use, and stolen vehicle tracking that can be installed voluntarily.

It is SMOTO's opinion that ITS solutions and services cannot be used, without the express consent of the motorcyclist, to collect, store or process data that would breach the data security or privacy of the user or any information that would require maintaining a personal data register.

It is SMOTO's opinion that only intelligent transport solutions which have been designed and developed taking into consideration all road user groups, such as pedestrians, cyclists, and motorcyclists, and which also consider vehicles without corresponding equipment can be accepted for vehicle use.

SMOTO endorses making dynamic traffic data and other information available to the motorcyclists and accessible for use in various ITS services.

SMOTO endorses on-the-road traffic control that can be used to replace mandatory vehicle inspections. The payment, insurance, emission, and noise level information for a vehicle is available in the registers maintained by authorities.

It is SMOTO's opinion that the 112 eCall system for motorcycles cannot impose more significant equipment and installation costs to motorcyclists than the one used in cars.

SMOTO endorses the development and implementation of PTW riding simulators used for riding training and discipline-specific training for the purposes of obtaining a driving license.

SMOTO does not accept intelligent transport solutions that restrict the handling and/or performance of motorcycles. Intelligent transport systems cannot be coercive in nature; automated emergency or forceful stopping methods are not acceptable

SMOTO opposes intelligent transport solutions that enable the monitoring and supervision of riding and remote control of the motorcycle, or the use of which enables removing control of the motorcycle from the rider and transferring it to various technical systems.