

Artificial Intelligence and Vehicle Regulations

I. Mandate

1. The Working Party on Automated/Autonomous and Connected Vehicles (GRVA) received inputs regarding Artificial Intelligence in wheeled Vehicles, falling in the scope of the World Forum for Harmonization of Vehicle Regulations.
2. GRVA consulted the Administrative Committee on the Coordination of Work (WP.29/AC.2) on this matter in Fall 2020. The Committee raised the question of the need to develop a specific Resolution. It decided, for the time being, to request that GRVA continues addressing this item, also with the aim to develop definitions first and then, corresponding requirements in the scope of WP.29 activities, if necessary (see GRVA-08-10).

II. Proposal for a Guidance document

3. GRVA has already developed a position regarding software updates, for the deployment and management of software irrespective of the usage of Artificial intelligence". The [Member States], [contracting parties to the 1958 and the 1998 Agreements], participating in the Working Party on Automated/Autonomous and Connected Vehicles,

Having recognized the significant penetration of some Artificial Intelligence in wheeled vehicles covered in the scope of the agreements administered by the World Forum for Harmonization of Vehicle Regulations,

Having noted that Industry currently could use machine-learning algorithms to create frozen software versions and/or to support automated test processes,

Having discussed the technical fundamental aspects of some Machine Learning systems in automotive products, to which the general public calls Artificial Intelligence, and discussed corresponding definitions,

Recalling the adoption of Recommendations on uniform provisions concerning cyber security and software updates (ECE/TRANS/WP.29/2022/60) and UN Regulation No. 156 (Software Update and Software Update Management System)

Having assessed the importance of proper AI lifecycles for compatibility with existing regulatory regimes and with the safety expectations,

Having acknowledged that the technology is still in development,

Have agreed on the following recommendations using AI-based algorithms within their automotive products:

Software versions

1. This guidance document applies to regulatory requirements for type approval, self-certification, market surveillance, Conformity of Production and Periodic Technical Inspections. Industry should not issue software updates which will modify or materially impact the safety, environmental, security or other technical performance or functionality of a type-approved function without re-engaging the Approval Authority. Software updates which do not impact type-approved characteristics can be deployed without re-engaging the Approval Authority.

AI lifecycle

2. It is recommended that a software version should be frozen after having trained an AI-system which is incorporated in the software. It should be validated and assessed with regards to safety and other relevant requirements. Following that process, the validated software may be deployed in vehicles of a vehicle type.

Training data

3. It is recommended to verify used data in terms of data protection and privacy, and other legal requirements. This guideline is without prejudice to existing market-specific legislations and regulations concerning how personal data is collected and used. Where such regulations exist, they contribute to the overall safety of the AI system through setting personal data management safety standards
