



SESEC IV Translation

Key Points of Automotive Standardization in 2021

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Introduction

On 28 June 2021, the Ministry of Industry and Information Technology (MIIT) announced the key points of automotive standardization in 2021. The document lays out plans to accelerate the development of automotive standards in strategic emerging fields, especially in the fields of new energy vehicles, intelligent connected vehicles and automotive electronics.

The translation offered by SESEC is as follows.

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Key Points of Automotive Standardization in 2021

The automotive standardization in 2021 will thoroughly put into practice the requirements of the *Development Plan for New Energy Vehicle Industry (2021-2035)* and the *Guidelines for the Construction of Standard System for Internet of Vehicles Industry (Intelligent and Connected Vehicles)*. It will further focus on key areas, pay attention to collaborative innovation, strengthen the guiding role of application, and continuously improve the automotive standards system, thus providing solid support for the high-quality development of automobile industry. In particular, the automotive standardization work in 2021 will be based on the following points and tasks.

1. Strengthening planning and guidance, and paying attention to top-level design

1.1.To accelerate the establishment of the standards system during the 14th Five-Year Plan. To complete the plan for the establishment of the automotive standards system during the 14th Five-Year Plan, establish the standards system of new energy vehicles and intelligent and connected vehicles, and define specific interim objectives in accordance with the requirements of the national strategic planning and the special planning for automotive industry.

1.2.To improve the roadmap of automotive standardization. To promulgate the *China Standardization Roadmap for Electric Vehicles (Version 3.0)*, and conduct effective promotion and implementation; launch the revision of the *Standardization Development Roadmap for Advanced Driver Assistance Systems (Version 2.0)* in combination with the application of autonomous driving technology.

1.3.To study and establish the intelligent manufacturing standards system for the automotive industry. To implement the deployment of the national overall construction plan for intelligent manufacturing, and build an intelligent manufacturing standards system for the automotive industry – covering basic generality, key technologies, segmented application and other specific fields.

2. Focusing on key areas and optimizing standard supply

2.1.Accelerating the research and development of automotive standards in strategic emerging areas

2.1.1. New energy vehicles:

- To strengthen the safety of electric vehicles, carry out an evaluation of the implementation effectiveness of safety standards for electric vehicles, traction batteries and battery swapping, and promote the promulgation and implementation of standards on conductive charging safety requirements and post-crash safety requirements.
- To pay attention to the improvement of the overall performance of electric vehicles, and speed up the formulation and revision of standards on power performance, remote services, and management and technical conditions for pure electric passenger vehicles.
- To focus on the development and use of fuel cell electric vehicles, and promote the standard development and revision for fuel cell electric vehicles' (i) energy consumption and driving range,

(ii) low temperature cold start, (iii) power performance, (iv) on-board hydrogen system, and (v) hydrogen refueling nozzle.

- To accelerate the innovation and breakthrough of key components, and carry out the formulation and revision of standards on traction batteries, supercapacitors, drive motor systems, and insulated gate bipolar transistor (IGBT) modules.
- To support the innovative development of battery swapping mode, and promote preliminary research of standards on the interchangeability of on-board battery swapping systems for vehicles with swappable batteries, universal platforms for battery swapping, battery packs and its accessories, and communication among battery packs, vehicles and battery swap station.
- To support the green development of electric vehicles, carry out preliminary research of (i) standards on the general requirements for recycling of traction batteries, and (ii) guidelines for the design of echelon, and complete the formulation of standards on traction battery recycling service network.

2.1.2. Intelligent and connected vehicles:

- To adapt to the development trends of new technologies, accelerate the establishment and formulation of mandatory national standards on vehicle cyber security, software updates and data recording system for autonomous driving.
- To strengthen the support of basic standards, complete the calls for public comments on the recommended national standard of intelligent and connected vehicles – terms and definitions; start and continuously promote the development of basic standards on information security engineering and operating system;
- To closely follow the technological application in the industry, complete the examination and submission for approval of standards for driver attention monitoring, door opening reminder and other auxiliary driving systems, and promote the formulation of key functional standards on combined driving assistance and automatic parking;
- To accelerate the formulation and promulgation of standards on functional requirements and sites of autonomous driving application and road test methods – with a focus on the multi-scenario application of intelligent and connected vehicles; and study relevant standards for specific application requirements such as port and distribution;
- To conduct research and analysis on the standardization demand for an user training manual of autonomous driving functions and products, in view of the differences in the use of autonomous driving functions.

2.1.3. Automotive electronics:

- To focus on promoting the establishment and development of standards for on-board accident emergency call, on-board satellite positioning system, hands-free call and voice interaction,

- To accelerate the formulation and revision of standards on key communication and sensing components, such as wireless communication terminal, millimeter wave radar, lidar and active/passive infrared detection system; and conduct research on standards on core semiconductors and components, such as automotive chips, automotive memory and automotive sensors;
- To coordinate and promote the formulation and revision of basic general EMC standards, and start preliminary research for the development and revision of EMC requirements and test methods, and of vehicle antenna system performance evaluation;
- To orderly promote the formulation and revision of basic supporting standards on functional safety, safety of the intended functionality (SOTIF), functional safety audit and assessment methods, and ASIL determination method;
- To speed up the construction of automotive Ethernet standards system, and the research on standardization projects;
- To carry out the conversion of international standards for the environmental assessment of electric drive systems, and for the electrical requirements of 48V power supply systems.

2.2. Continuously improving the standards on conventional vehicles and the standards in basic fields

2.2.1. Vehicle energy saving:

- To start preliminary research and establishment of standards on next-stage fuel consumption evaluation methods and targets for passenger vehicles, and on energy consumption limits for electric vehicles;
- To continue promoting the revision of fuel consumption limits for light-duty and heavy-duty commercial vehicles, and complete the examination and submission for approval of standards on test methods of energy consumption and driving range for electric heavy-duty commercial vehicles;
- To carry out pre-research on standards on off-cycle technology/device evaluation methods for passenger vehicles, such as high-efficiency motor and cylinder deactivation;
- To complete the formulation of standards on energy consumption labels for light-duty gasoline and diesel vehicles, plug-in hybrid electric vehicles, and pure electric vehicles.

2.2.2. Conventional vehicles:

- To coordinate and promote standard research on vehicle definition and classification, and complete the revision of the terms and definitions for types of motor vehicles and trailers;
- To set the relevant requirements of international standards as benchmark, organize and carry out preliminary research on standards for vehicle performance tests, parameter measurement and driving comfort;

- To actively promote research on standards for vehicle abnormal noise, active noise cancellation and warning sound for reversing – based on vehicle noise pollution control;
- To revise and improve relevant standards on semi-trailers and interchangeability of couplings between tractors, and semi-trailers with a focus on the transformation and development of freight equipment and transportation mode;
- To strengthen the research on standards for compressed natural gas vehicles (CNGV), and effectively develop and revise relevant standards.

2.2.3. Automotive safety:

- To focus on the revision and improvement of mandatory national standards on vehicles and parts, such as pedestrian protection, front and rear end protection, roof crush resistance of passenger vehicles, side collision protection, rear collision safety requirements, seat belts and restraint systems, child restraint systems, external projections and seat strength of passenger vehicle/school bus, and promote the upgrading of passive safety standard requirements;
- To carry out preliminary research, formulation and revision of forward visibility for drivers, anti-theft devices, external protection for passenger vehicles and guidance for emergency rescue, and improve the general safety standard requirements;
- Focusing on the industry pain points and management needs, promote the evaluation and revision of standards on limits of dimension, axle load and masses
- To carry out preliminary research on relevant standards on matching of tractors and combination vehicles, steadily promote the revision of safety standards on dangerous goods transport vehicles, speed up the revision of standard on braking system for passenger vehicles, and conduct research on key components standards, such as V-shaped thrust rod for suspension, height control valve and air suspension for passenger vehicles.

2.3. Carrying out research on green, low-carbon and intelligent manufacturing standards

2.3.1. Green and low carbon:

- To improve the standards subsystems of (i) clean automobile production processes, low-carbon life cycle energy and green product design, (ii) automobile re-manufacturing and recycling, and (iii) comprehensive utilization of traction battery for vehicles;

To carry out research on serial standards on carbon emissions and accounting methods for vehicle manufacturers and for the whole life cycle of products, and promote the clean production and use of vehicles.

2.3.2. Intelligent manufacturing:

- To focus on promoting the deep application of intelligent technology in key segments, such as automobile R&D and design, production and manufacturing, warehousing and logistics, operation and management and after-sales service;
- To study and develop basic standards on the terms and definitions of intelligent manufacturing in the automobile industry, maturity assessment requirements of intelligent manufacturing capabilities, and guidelines for identification application in automobile industry,
- To study and develop relevant standards on key technologies such as mass customization, digital workshop for new energy vehicles and safety management requirements for automobile industry control system;
- To take into account the construction requirements of standardized factories and digital factories, and carry out research on relevant standards on data acquisition, flow and analysis, production technology and process, virtual simulation, digital system and mass customization.

2.4. Studying and developing technical standards for motorcycles

2.4.1. Motorcycles:

- To carry out research on standards for the networking and electronic anti-theft of motorcycles, in accordance with the technological development and industrial development demand of the motorcycle industry;
- To improve the standards system on motorcycle hub motor, and carry out research and development of standards for high-speed motor systems;
- To speed up the establishment of safety requirement standards for conductive connection between electric motorcycle and external power supply;
- To organize research on serial standards for charging and battery swapping systems for electric motorcycles.

3. Deepening international cooperation and strengthening harmonization of standards and regulations

3.1. To give full play to the role of multilateral and bilateral cooperation mechanisms. (i) To make full use of the established multilateral and bilateral cooperation mechanism platforms, focusing on the areas of new energy vehicles and intelligent and connected vehicles, organizing cooperative research on standardization roadmaps, jointly proposing international standards and regulations and carrying out relevant testing and verification activities. (ii) To implement the *Belt and Road* national strategy, promoting dialogue and cooperation between domestic and international standardization institutions by setting up expert groups and launching training programs together with related countries and regions, and actively promote the "going global" of Chinese standards.

3.2. To deeply participate in the formulation of global technical regulations. (i) To earnestly fulfill the responsibilities as the vice chairman of the Working Party on Automated/Autonomous and

Connected Vehicles (GRVA), and as the co-chairman and vice-chairman of the informal working groups on functional requirements for automated and autonomous vehicles, electric vehicle safety, electric vehicles and the environment, fuel cell electric vehicles and noise under the framework of the World Forum for Harmonization of Vehicle Regulations (WP. 29). (ii) To deeply participate in the formulation and harmonization of technical regulations under the framework of each working party, promote the promulgation and implementation of the global technical regulations on electric vehicle safety (2nd phase), and fully take part in the research and formulation of global technical regulations on power battery durability and fuel cell safety. (iii) To continue to promote the improvement of the regulatory framework and the formulation of specific technical regulations for intelligent and connected vehicles, and deeply participate in the harmonization of international regulations on verification methods for automated driving (VMAD), event data recorder (EDR/DSSAD), cyber security and software updates (TFCS/OTA), and automatically commanded steering function (ACSF). (iv) To deeply participate in the revision of UN regulation UN R117 (tire rolling sound emissions, rolling resistance and adhesion on wet surfaces) and actively contribute with China-led proposals.

3.3.To strengthen the coordination of international and foreign standards. (i) To closely follow up on the standardization progress of the technical committee on road vehicles of ISO (ISO/TC22), and the technical committee on electrical power/energy transfer systems for electrically propelled road vehicles of IEC (IEC/TC69), as well as their subordinate working groups, and complete the research task of IEC/SMB/SEG11 Future Sustainable Transportation System Assessment Group. (ii) To fulfill the responsibility as the convener of ISO working group on test scenarios of automated driving systems, promote the development of serial standards on test scenarios of automated driving systems, define the follow-up work plan of test scenario standards, and work with other countries and regions to promote the establishment and development of standardization projects. (iii) To speed up the work processes of two international standards – namely anti-fog coating for exterior lighting applications, and methods for the determination of light transmittance of safety glazing materials – and focus on promoting the development and revision of China-led international standards, such as EMC test for vehicles and parts, external protection for passenger vehicles, and negative pressure ambulance.

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Ministry of Industry and Information Technology

Introduction of SESEC Project



The Seconded European Standardization Expert in China (SESEC) is a visibility project co-financed by the European Commission (EC), the European Free Trade Association (EFTA) secretariat and the three European Standardization Organizations (CEN, CENELEC and ETSI). Since 2006, there has been three SESEC projects in China, SESEC I (2006-2009), SESEC II (2009- 2012) and SESEC III (2014-2017). In April 2018, SESEC IV was officially launched in Beijing, China. Dr. Betty XU was nominated as the SESEC expert and will spend the next 36 months on promoting EU-China standardization information exchange and EU-China standardization cooperation.

The SESEC project supports the strategic objectives of the European Union, EFTA and the European Standardization Organizations (ESOs). The purpose of SESEC project is to:

- **Promote European and international standards in China;**

- **Improve contacts with different levels of the Chinese administration, industry and standardization bodies;**
- **Improve the visibility and understanding of the European Standardization System (ESS) in China;**
- **Gather regulatory and standardization intelligence.**

The following areas have been identified as sectorial project priorities by the SESEC project partners: Internet of Things (IoT) & Machine-to-Machine(M2M) communication, communication networks & services, cybersecurity & digital identity, Smart Cities (including transport, power grids & metering), electrical & electronic products, general product safety, medical devices, cosmetics, energy management & environmental protection (including eco-design & labelling, as well as environmental performance of buildings).