

GAST Weekly Report on Automotive Industry & Technology
(No. 568)_Special Issue on Interpretation of the *National Guidelines for*
Developing Standards for the Internet of Vehicles Industry (ICVs) (2023)
Issued by MIIT and SAC
July 31, 2023

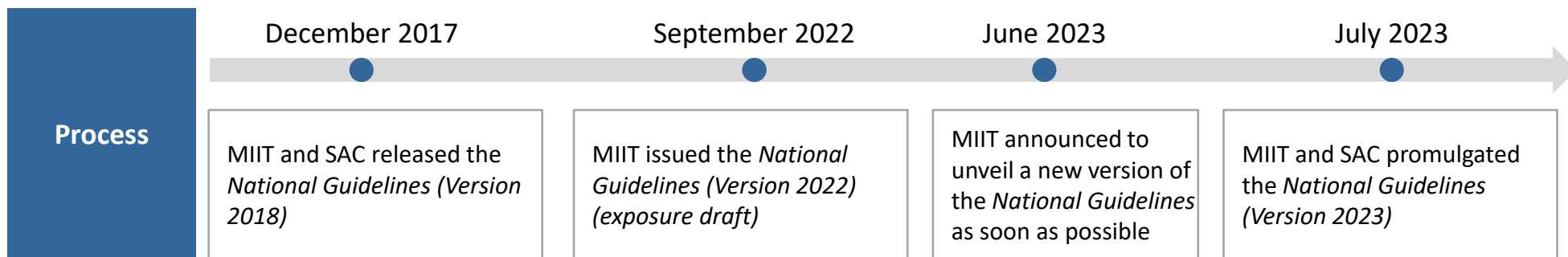
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Outline

- Title of the policy: *National Guidelines for Developing Standards for the Internet of Vehicles Industry (ICVs) (Version 2023)*
- Issued by the Ministry of Industry and Information Technology (MIIT) and the Standardization Administration of China (SAC)
- Released on July 26, 2023
- Main content:
 - Background
 - Development goals and core architecture
 - Major amendments
 - Potential impacts

Background of Releasing the New Version of National Guidelines (1/2)

- Since the *National Guidelines* released by the MIIT and SAC in December 2017, a series of achievements have been made in the formulation of standards for ICVs



The goals set forth in the *Guidelines (Version 2018)* have been basically achieved until now. With the formulation and amendment of relevant standards, it has reached the international leading level in terms of the degree of improvement and the number of standards



- ❑ **The *Guidelines (Version 2018)* has guided the initial establishment of a system of standards for ICVs and made active contributions to harmonizing with relevant international regulations, playing a leading role**

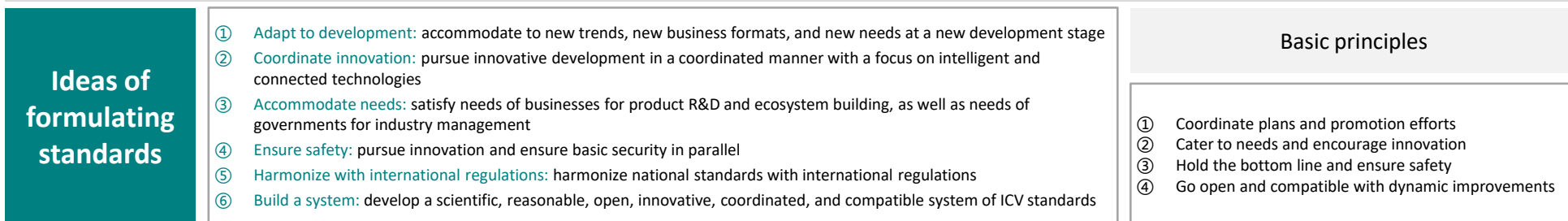
Background of Releasing the New Version of National Guidelines (2/2)

- To adapt to new trends, new features, and new needs of the ICV development in China, the MIIT and SAC jointly released a new version of the *National Guidelines* to cater to the industry

China's ICV industry is facing new situations, new opportunities, and new challenges → call for the update of standards for better development



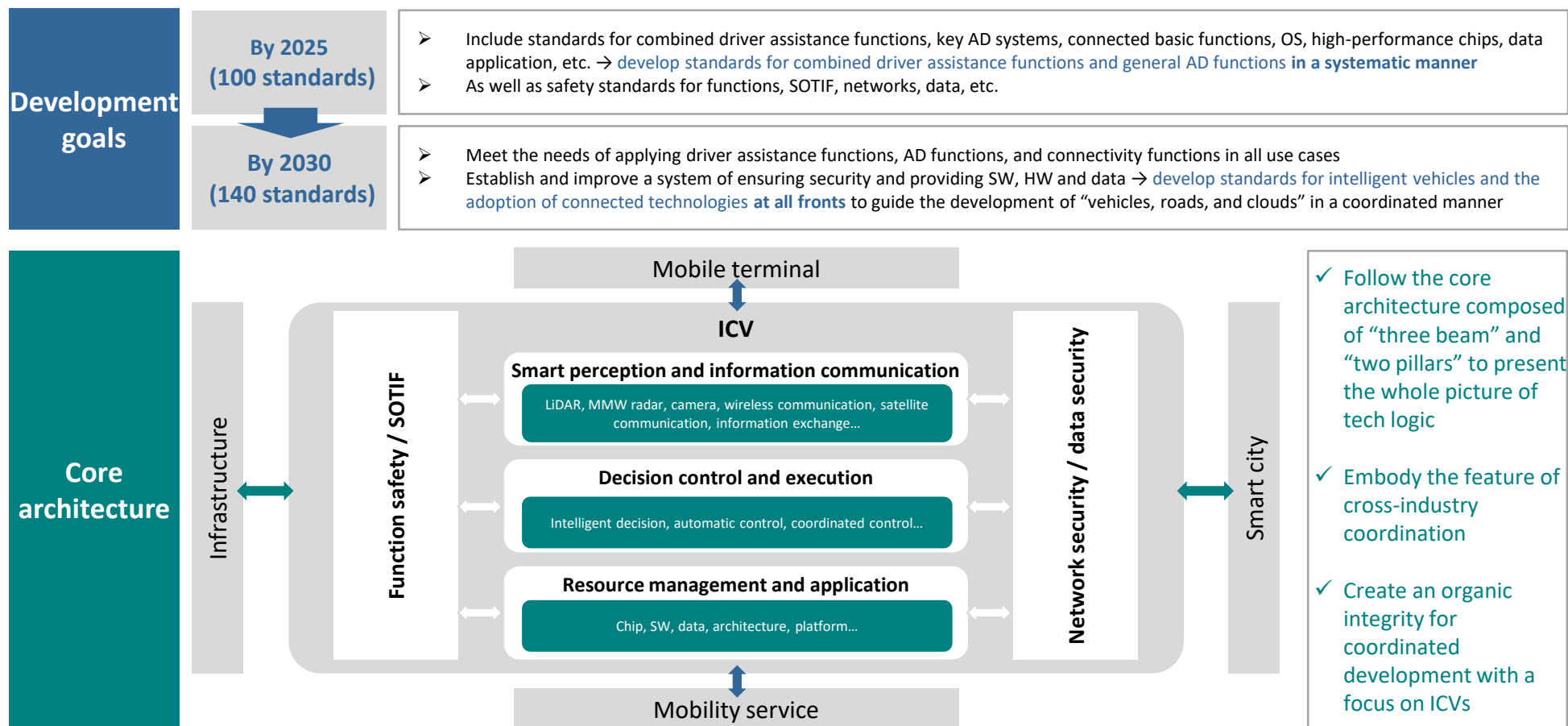
To better adapt to new development trends, the new version caters to the industry in a more scientific and improved way



- ❑ **Dynamic and flexible, the *National Guidelines* would be updated dynamically to adapt to new development trends of the industry → keep pace with the times to guide and standardize the industry to develop in an orderly manner**

Development Goals and Core Architecture

- The new version proposes to develop standards that adapt to national conditions and harmonize with international regulations and lays out a core architecture for goals of 2025 and 2030



Major Amendments: Add Some Content in the Second Level (1/2)

- The *Version 2023* has made some changes in the framework compared to the *Version 2018*, including adjustments of the first and second levels as well as extension of the third level as per the actual needs of the sub-sectors of the ICV industry

Framework of the ICV standard system			Major amendments	GAST's analysis
ICV standard system	Basis	Terms and definitions		<ul style="list-style-type: none"> ➢ The ICV industry continues to mature → The framework of the relevant standard system is increasingly refined ➢ The concept of comprehensive automotive safety has been extended to SOTIF and data security, and technological innovation and basic security assurance are advanced simultaneously ➢ The ICV industry is seeing faster iteration and maturity of key functions and technologies, continuous push towards commercialization, constant expansion of application scenarios, and deeper integration of resources
		Types and levels		
		Symbols and encodings		
	General specifications	Functional safety and SOTIF	➢ Delete “Related Standards” at the first level in the old version and add a third level	
		Cybersecurity and data security	➢ Refine functional safety and information security	
		HMI	➢ Add “Maps and Positioning” and “Electromagnetic Compatibility” at the second level	
		Maps and positioning	➢ Clearly define ADAS and AD	
		Electromagnetic compatibility	➢ Add “Networking Functions and Applications” and “Resource Management and Application” at the second level	
		Evaluation system and tools		
	Product and technology application	Information perception and fusion		
		ADAS		
		AD		
		Networking functions and applications		
		Resource management and application		

□ The *Version 2023* carries forward, extends and refines the *Version 2018*

Major Amendments: Add Some Content in the Second Level (2/2)

- Standards for “Maps and Positioning”, “Networking Functions and Applications” and “Resource Management and Application” are newly added in the *Version 2023*

New part	Specific content	Significance to the industry
Maps and Positioning	<p>Include standards for coordinate systems, vehicular maps, satellite positioning, inertial navigation and fusion positioning</p> <ul style="list-style-type: none"> ➤ Standards for coordinate systems: the relevant coordinate systems used for navigation, positioning, ranging, and perception, as well as their technical requirements ➤ Standards for vehicular maps: requirements and evaluation methods for applying vehicular maps to vehicles ➤ Standards for satellite positioning, inertial navigation and fusion positioning: provide safe and reliable positioning services for vehicles → support vehicles to realize functions such as navigation, path planning, and decision control 	<ul style="list-style-type: none"> ✓ Improve the accuracy and completeness of vehicle positioning and map data ✓ Promote the advancement of AD technologies ✓ Enhance the interactive experience of V2X and ensure comprehensive safety
Networking Functions and Applications	<p>Include standards for functional specifications and for networking technology applications</p> <ul style="list-style-type: none"> ➤ Standards for functional specifications: technical requirements and test methods for vehicles to achieve specific functions through wireless communication technologies ➤ Standards for networking technology applications: formulate technical requirements and standards for corresponding systems as per different types of wireless communication technologies 	<ul style="list-style-type: none"> ✓ Facilitate technological innovation and differentiated development of ICVs ✓ Enable interconnection and interoperation between different vehicles and systems ✓ Speed up the application and popularization of V2X
Resource Management and Application	<p>Include standards for platform architectures, automotive software, and automotive chips</p> <ul style="list-style-type: none"> ➤ Standards for platform architectures: standards for ICV cloud control platforms, EEA interfaces, in-vehicle wired communication technologies, diagnostic communication, etc. ➤ Standards for automotive software: standards for software upgrade management, automotive operating systems, and application software → underpin software management and software-level application ➤ Standards for automotive chips: requirements and test methods of the performance of key automotive chips such as safety and computing chips 	<ul style="list-style-type: none"> ✓ Drive the optimization and integration of industry resources ✓ Promote the scale-up and functional expansion of the V2X platform ✓ Accelerate open innovation in automotive software to meet diverse user needs

□ The amendment direction is highly consistent with the development trend of the ICV industry

Potential Impacts on the ICV Industry

- The new version would boost the improvement of intelligent driving technologies, the formation of an ICV industrial landscape, and the high-quality development of the ICV industry

Secure the development of intelligent driving technologies

- The goals of two development stages (2025 & 2030) focus on the formulation and amendment of ICV-related standards for AD, connectivity, and other functions → effectively secure the innovation and R&D of technologies; underpin the continuous improvement of perception, decision control, execution, etc. for ICVs
- The new version highlights safety standards → drive the comprehensive safety of ICVs to improve at a faster pace

Create a new development pattern of the ICV industry

- The “three-beam and two-pillar” core architecture adapts to the characteristics of ICV technologies (deep integration and cross-industry coordination), facilitates coordination between relevant industrial committees, pools multi-party strengths, promotes rapid and sound development of new products, new business formats, and new business models, and creates a new development pattern of the industry

Guide the rapid and sound development of new products, new business formats, and new business models

- The new version keeps pace with the high-quality development of the industry and plays a role in guiding the formulation and amendment of ICV standards as a top-level design → Lay a solid foundation for the ICV industry to pursue high-quality development and make contribution to the orchestration and formulation of international standards and regulations with China-specific wisdom and efforts

- ❑ **As a top-level design, the *Guidelines (Version 2023)* would play a role in guiding the standards for ICVs and leading the ICV industry to pursue high-quality development**



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Company Profile

Setting its foothold in China automotive industry, GAST Strategy Consulting, LLC is oriented to the globe to focus on the ecosystem of the whole automotive industry and starts from three dimensions (industry, enterprise and technology) to carry out in-depth study on strategy design, business positioning, management improvement, system building, business process reengineering, product planning, technology choices and business models. It is dedicated to providing governments at all levels with decision-making support and implementation advice and enterprises in the automotive industry chain and relevant industries with all-dimensional high-level professional consulting services in strategies, management and technologies. Since the establishment, GAST is dedicated to becoming a world top auto think tank as the vision and sharing wisdom as the mission. Adhering to creating value for clients and focusing on actual effects, GAST commits itself to forging long-term partnership and providing guidance service. It has fostered strategic partnership with and is providing services for nearly 100 domestic and international enterprises, organizations in the automotive industry and governments at all levels by virtue of comprehensive, systematic, advanced and pragmatic consulting methods.

Range of Service

Provide diversified and open services and flexible ways of cooperation for customers, including but not limited to:

- Executive-oriented strategy, management and technology consulting services
- All-round and customized special project research: covering macro strategy, industrial development, interpretation of policies and regulations, the internet, business models, corporate strategy and management, auto market, product research, product design methodology, research on auto shows, interpretation of forums, energy conservation and emission reduction, new energy vehicles, intelligent vehicles and comprehensive automotive technologies
- Serve as reliable resource that can win customers' long-term dependence and provide open cooperation that can meet customers' specific requirements at any time
- Provide a high-end sharing platform (CAIT) for industrial communication, exchange and in-depth research
- The company provides nearly 1,000 research reports in Chinese, English and Japanese at present

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