

Supplementary Material: ICV Cybersecurity and Data Security

Knowledge Base Inventory

This supplementary material details all documents contained in the Knowledge Base (KB) that supports the research in this paper. The KB focuses on the domain of cybersecurity and data security for intelligent connected vehicles (ICVs) and currently includes 108 key documents.

The following two tables provide a complete list of this KB:

- ◆ **Table 1:** Summarizes the 48 relevant laws and regulations.
- ◆ **Table 2:** Summarizes the 60 relevant technical standards and normative documents.

To promote further research in this field (such as AI-driven automated compliance analysis), we are sharing this KB inventory. Given the rapid evolution of ICV security regulations and standards, this Knowledge Base will also be continuously maintained and updated to incorporate the latest industry developments.

1. 48 Relevant Laws and Regulations

Table 1. List of Detailed Information on 48 Relevant Laws and Regulations.

Serial Number	Name of Laws and Regulations
1	Detailed Rules for the Implementation of Data Security Risk Assessment in the Field of Industry and Information Technology (for Trial Implementation)
2	2024 Vehicle Networking Special Action of "Zhudun Chelian" in Shanghai Municipality
3	Management Specifications for Road Testing and Demonstration Application of Intelligent Connected Vehicles (for Trial Implementation)
4	Overall Implementation Plan for the Policy Pilot Zone of Intelligent Connected Vehicles in Beijing Municipality
5	Regulations on Autonomous Driving Vehicles in Beijing Municipality
6	Guidelines for the Construction of Standard System for Cybersecurity and Data Security in Vehicle Networking
7	Provisions on Promoting and Regulating Cross-border Data Flow
8	Notice of the General Office of the Ministry of Industry and Information Technology on Carrying out Pilot Work for Identity Authentication and Security Trust in Vehicle Networking
9	Opinions of the Ministry of Industry and Information Technology on Strengthening the Access Management of Intelligent Connected Vehicle Manufacturers and Products
10	Measures for the Management of Data Security in the Field of Industry and Information Technology (for Trial Implementation)
11	Guidelines for Cybersecurity Protection of Industrial Control Systems
12	Implementation Plan for Enhancing Data Security Capabilities in the Industrial Field (2024-2026)
13	Notice on Strengthening the Work of Cybersecurity and Data Security in Vehicle Networking
14	Notice on Strengthening the Management of Surveying, Mapping and Geographic Information Security Related to Intelligent Connected Vehicles
15	Notice on Further Strengthening the Management of Access, Recall and Software Over-the-Air (OTA) Upgrade of Intelligent Connected Vehicle Products
16	Notice on Carrying out Pilot Work for the "Vehicle-Road-Cloud Integration" Application of Intelligent Connected Vehicles
17	Notice on Carrying out Pilot Work for the Access and Road Operation of Intelligent Connected Vehicles
18	Implementation Opinions on Promoting the Remote Driving Testing and Demonstration Application of Intelligent Connected Vehicles in Chengdu Municipality (Open for Public Comments)
19	Implementation Opinions on Promoting the Remote Driving Testing and Demonstration Application of Intelligent Connected Vehicles in Chengdu Municipality (Open for Public Comments)
20	Action Plan for Improving the Information Security Capabilities of Enterprises in the Field of Industry and Information Technology in Guangdong Province
21	Regulations on the Innovative Development of Intelligent Connected Vehicles in Guangzhou

	Municipality
22	Administrative Provisions for the Pilot Application of Basic Maps for Intelligent Connected Vehicles in Guangzhou Municipality (for Trial Implementation)
23	Guidelines for the Construction of National Vehicle Networking Industry Standard System (Intelligent Connected Vehicles, 2023 Version)
24	Regulations on Cybersecurity and Informatization of Hunan Province
25	Provisions on the Liability for Repair, Replacement and Return of Household Automobile Products
26	Decision of the Standing Committee of the People's Congress of Jiangsu Province on Promoting the Development of Vehicle Networking and Intelligent Connected Vehicles
27	Measures for the Management of Public Data of Jiangxi Province
28	Three-Year Action Plan for Promoting the High-Quality Development of the Intelligent Connected Vehicle Industry in Pudong New Area (2023-2025)
29	Several Provisions on the Management of Automobile Data Security (for Trial Implementation)
30	Measures for the Opening of Public Data of Shandong Province
31	Data Regulations of Shanghai Municipality
32	Measures for the Management of Testing and Application of Intelligent Connected Vehicles in Shanghai Municipality
33	Detailed Rules for the Demonstration Operation of Intelligent Connected Vehicles in Shanghai Municipality
34	Data Regulations of the Shenzhen Special Economic Zone
35	Regulations on the Management of Intelligent Connected Vehicles in the Shenzhen Special Economic Zone
36	Measures for Security Assessment of Data 出境 (Cross-border Data Transfer)
37	Guidelines for Declaring Security Assessment of Cross-border Data Transfer (Version 2)
38	Measures for the Management of Cybersecurity Protection of Communication Networks
39	Regulations on the Management of Network Data Security
40	Regulations on Promoting the Development of Vehicle Networking in Wuxi Municipality
41	Provisions on the Management of Automobile Data Processing in Zhejiang Province
42	Guidelines for Improving the Supply Chain Management Level of Manufacturing Enterprises
43	Implementation Guidelines for the Pilot of Access and Road Operation of Intelligent Connected Vehicles (for Trial Implementation)
44	Personal Information Protection Law of the People's Republic of China
45	Data Security Law of the People's Republic of China
46	Cybersecurity Law of the People's Republic of China
47	UN Regulation No. 155 - Cyber security and cyber security management system
48	UN Regulation No. 156 - Software update and software update management system

2. 60 Relevant Standards

Table 2. List of Detailed Information on 60 Relevant Standards.

Serial Number	Standards Number	Name of Standards
1	DB31T 1561-2025	[Shanghai] Cybersecurity Technical Requirements for Vehicle Networking Service Platforms
2	DB3502T 046.4-2021	[Xiamen Municipal Bureau of Transport] Online Car-Hailing Operation Service Management - Part 4: Information Security
3	DB4403T 355-2023	[Shenzhen] Information Security Technical Requirements for Intelligent Connected Vehicles (Whole Vehicle)
4	DB4403T 361-2023	[Shenzhen] Data Security Requirements for Intelligent Connected Vehicles
5	DB4403T426-2024	[Shenzhen] Cybersecurity Technical Requirements for Intelligent Connected Vehicles
6	GB 44495-2024	Information Security Technical Requirements for Automobiles (Whole Vehicle) (To Be Implemented Soon)
7	GBT 38628-2020	Information Security Technology - Cybersecurity Guidelines for Automotive Electronic Systems
8	GBT 40855-2021	Information Security Technical Requirements and Test Methods for Remote Service and Management Systems of Electric Vehicles
9	GBT 40856-2021	Information Security Technical Requirements and Test Methods for In-Vehicle Information Interaction Systems
10	GBT 40857-2021	Information Security Technical Requirements and Test Methods for Automotive Gateways

11	GBT 40861-2021	General Information Security Technical Requirements for Automobiles
12	GBT 41578-2022	Information Security Technical Requirements and Test Methods for Electric Vehicle Charging Systems
13	GBT 41871-2022	Information Security Technology - Data Processing Security Requirements for Automobiles
14	GBT 42017-2022	Information Security Technology - Data Security Requirements for Online Car-Hailing Services
15	GBT 44774-2024	Specification for Information Security Emergency Response Management of Automobiles
16	GBT 44778-2024	Information Security Technical Requirements and Test Methods for Automotive Diagnostic Interfaces
17	ISO/SAE 21434:2021	Road vehicles — Cybersecurity engineering
18	ISO 24089:2023	Road vehicles — Software update engineering
19	ISO/PAS 5112:2022	Road vehicles — Guidelines for auditing cybersecurity engineering
20	TBJQC 201905—2023	[Beijing Automotive Industry Association] Information Security Test Methods and Judgment Criteria for Intelligent Connected Vehicles
21	TCAAMTB 97.10—2022	[China Association of Automobile Manufacturers] Technical Specifications for Construction of Electric Medium & Heavy-Duty Trucks with Shared Battery Swap and Battery Swap Stations - Part 10: Technical Requirements for Data Security Management
22	TCITSA 44—2024	[China Intelligent Transportation Systems Association] Rail Transit Vehicles - Technical Requirements for Ethernet Control Network Security Audit Products
23	TCSAE 289—2022	[China Society of Automotive Engineers] Vehicle-Road Collaboration - Cybersecurity Technical Requirements for Access of Intelligent Roadside Equipment
24	TCTS 11—2023	[China Road Traffic Safety Association] Technical Requirements for Data Security Chips of Automotive Recorders
25	TGHDQ 75—2021	[Jilin Provincial Automotive Electronics Association] Information Security Technical Requirements for Vehicle Near-Field Communication (NFC)
26	TGHDQ 87.1—2022	[Jilin Provincial Automotive Electronics Association] Information Security Technical Requirements for Vehicle Controllers - Part 1: General Technical Requirements
27	TGHDQ 87.2—2022	[Jilin Provincial Automotive Electronics Association] Information Security Technical Requirements for Vehicle Controllers - Part 2: In-Vehicle Information Interaction Systems
28	TGHDQ 87.3—2022	[Jilin Provincial Automotive Electronics Association] Information Security Technical Requirements for Vehicle Controllers - Part 3: Central Gateway Systems
29	TGHDQ 88.2—2022	[Jilin Provincial Automotive Electronics Association] Information Security Test Specifications for Vehicle Wireless Communication - Part 2: Security Test Specifications for In-Vehicle WLAN
30	TGHDQ 89.1—2022	[Jilin Provincial Automotive Electronics Association] In-Vehicle Network Security Test Specifications - Part 1: Security Test Specifications for In-Vehicle CAN Bus
31	TGHDQ 90—2022	[Jilin Provincial Automotive Electronics Association] Terminology and Definitions for Vehicle Information Security
32	TGHDQ 91—2022	[Jilin Provincial Automotive Electronics Association] Information Security Technical Requirements for Vehicle-Cloud Communication
33	TGHDQ 93—2022	[Jilin Provincial Automotive Electronics Association] Information Security Technical Requirements for Vehicle-Control Application Software on Mobile Terminals
34	TGHDQ 97—2022	[Jilin Provincial Automotive Electronics Association] Technical Requirements for Vehicle Information Security in the Conceptual Design Phase
35	TGHDQ 98—2022	[Jilin Provincial Automotive Electronics Association] Design Specifications for Secure Transmission of In-Vehicle CAN Communication Networks
36	TGHDQ 99—2022	[Jilin Provincial Automotive Electronics Association] Information Security Test Specifications for Telecommunication Modules of Intelligent Connected Vehicles
37	TGHDQ 100—2022	[Jilin Provincial Automotive Electronics Association] Hardware Information Security Test Specifications for Controllers of Intelligent Connected Vehicles
38	TGHDQ 101—2022	[Jilin Provincial Automotive Electronics Association] Information Security Technical Requirements for Vehicles in the Production and Operation Phase
39	TGHDQ 102—2022	[Jilin Provincial Automotive Electronics Association] Information Security Technical Requirements and Test Methods for Vehicle Remote Diagnostics
40	TGHDQ 103—2022	[Jilin Provincial Automotive Electronics Association] Information Security

		Technical Requirements for Intelligent Connected Vehicle Service Platforms
41	TGHDQ 104—2022	[Jilin Provincial Automotive Electronics Association] Information Security Technical Requirements for Remote Monitoring Systems of Intelligent Connected Vehicles
42	TGHDQ 105—2022	[Jilin Provincial Automotive Electronics Association] Information Security for Vehicle-Control Application Software on Mobile Terminals
43	TGHDQ 106—2022	[Jilin Provincial Automotive Electronics Association] Information Security Test Specifications for Vehicle Remote Upgrades
44	TGHDQ 107—2022	[Jilin Provincial Automotive Electronics Association] Technical Requirements for Vehicle Information Security Emergency Response and Vulnerability Management
45	TGHDQ 108—2022	[Jilin Provincial Automotive Electronics Association] Interface Protocol Requirements for Vehicle Information Security
46	TGHDQ 110—2022	[Jilin Provincial Automotive Electronics Association] Information Security Requirements for Software Signing of Vehicle Controllers
47	TGHDQ 111—2022	[Jilin Provincial Automotive Electronics Association] Information Security Requirements for Key Management of Vehicle Controllers
48	TGHDQ 113—2022	[Jilin Provincial Automotive Electronics Association] Technical Requirements for Vehicle Information Security Risk Analysis and Risk Management
49	TGHDQ 116—2022	[Jilin Provincial Automotive Electronics Association] Design Specifications for Secure Transmission of In-Vehicle Ethernet Communication Networks
50	TGHDQ 117—2022	[Jilin Provincial Automotive Electronics Association] Technical Requirements for Intrusion Detection and Situation Awareness for In-Vehicle Ethernet Communication Network Security
51	THEVCA 1.9—2023	[Hainan Provincial Association of Electric Vehicles and Charging Facilities] General Technical Requirements for Construction of Battery-Swappable Pure Electric Heavy-Duty Trucks and Shared Battery Swap Stations - Part 9: Communication and Data Security Management Requirements
52	TIMAS 052.7—2022	[Inner Mongolia Standardization Association] Technical Specifications for Shared Battery Swap Stations and Vehicle Battery Swap Systems for Electric Medium & Heavy-Duty Trucks - Part 7: Technical Requirements for Data Security Management and Risk Early Warning Analysis
53	TITS 0068—2017	[Zhongguancun CCCC Guotong Intelligent Transportation Industry Alliance] Information Security Technical Requirements for Connected Vehicles Based on Public Telecommunication Networks
54	TJQR 12—2023	[Anhui Provincial Robotics Society] Vehicle Networking - Roadside Units - Data Security Protection
55	TNBQLX 001—2021	[Ningbo Municipal Automotive Parts Industry Association] General Information Security Technical Requirements for Terminals and Components of Intelligent Connected Vehicles
56	TNBQLX 002—2021	[Ningbo Municipal Automotive Parts Industry Association] General Information Security Test Specifications for Terminals and Components of Intelligent Connected Vehicles
57	TSHV2X 4—2025	[Shanghai Vehicle Networking Association] Guidelines for Evaluation of Cybersecurity and Data Security Talents in Intelligent Connected Vehicles
58	TSXQCTB 001—2023	[Shanxi Provincial Automotive Industry Association] Information Security Technical Specifications for Industrial Control Systems in Automobile Manufacturing
59	YDT 4951-2024	[China Communications Standards Association] Cybersecurity Technical Requirements for In-Vehicle Telecommunication Terminals Based on Public Telecommunication Networks
60	YDT 4989-2024	[China Communications Standards Association] Technical Requirements and Test Methods for Cybersecurity Monitoring Data Collection of Vehicle Networking Basic Telecommunication Networks