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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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**Requirements of implementation of motor vehicle products
recall based on over-the-air update technology**

基于远程升级技术的汽车产品召回实施要求

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1 Scope

This document establishes the implementation procedures for recall activities and technical service activities based on over-the-air update technology. It stipulates the overall requirements, filing requirements, recall activity implementation process requirements and recall effect evaluation requirements.

This document applies to product recall activities and technical service activities carried out by automobile product manufacturers based on over-the-air update technology.

2 Normative references

GB/T 34402-2017

GB/T 39603-2020

GB/T 43387

GB 44495-2024

GB 44496-2024

GB/T 45496

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 39603- 2020, GB/T 43387, GB 44496-2024 as well as the followings apply.

3.1 Software

The part of an electronic control system that consists of digital data and instructions.

[Source. GB 44496-2024, 3.1]

3.2 Software update

The process of updating a certain version of software (3.1) to a new version (including changing the configuration parameters of the software) through an update package.

3.3 Over-the-air update; OTA update

A software update (3.2) in which the update is transferred to the vehicle wirelessly rather than using cables or other local connections.

3.4 Software download

The process of transferring software (3.1) from one computer system to another.

NOTE. The computer system includes vehicles, backend servers, etc.

3.5 Update package

Software package for software update (3.2).

[Source. GB 44496-2024, 3.6, modified]

3.6 Rollback

The process of undoing the current operation or change and restoring the system to the original version state before the operation or change was performed.

3.7 Recall activity based on over-the-air update

The entire process by which manufacturers take measures to eliminate defects or emission hazards in already sold automotive products through over-the-air update.

3.8 Technical service activities based on over-the-air update technology

The process by which manufacturers provide technical solutions to non-defect issues for already sold automotive products through over-the-air update.

3.9 Update scope

The boundary involved by over-the-air update to solve problems, add new features or improve performance.

NOTE. For example, product production start and end dates, production batch number or batch, etc.

3.10 Recall parts

Electronic control units and software that implements recall activities through over-the-air update to eliminate defects.

4 Abbreviations

The following abbreviations apply to this document. HMI. Human Machine Interface HUD. Heads Up Display IVI. In-Vehicle Infotainment MCU. Microcontroller Unit PKI. Public Key Infrastructure VIN. Vehicle Identification Number

5.1 Over-the-air update activities include technical service activities based on over-the-

air update technology and recall activity based on over-the-air update.

5.2 The implementing entities of over-the-air update activities include manufacturers,

recall authorities, recall technical institutions, etc.

5.3 Manufacturers shall comply with the implementation procedures shown in Figure 1

when carrying out technical service activities based on over-the-air update technology and recall activity based on over-the-air update.

6.2.2 When manufacturers use over-the-air update technology to add new functions or

improve performance, they shall conduct risk assessment or emission hazard assessment on the updated automotive products. Activities are classified according to the assessment results.

6.3 Security guarantee requirements

Manufacturers shall establish management systems and guarantee capabilities that are compatible with over-the-air update activities to ensure the safety of vehicles during and after the implementation of recall activity based on over-the-air update and technical service activities based on over-the-air update technology.

- The process of over-the-air update shall comply with the requirements of Chapter 4 and Chapter 5 of GB 44496-2024;
- It is not advisable to update while driving unless the update procedure requires it.

In this case, make sure the vehicle is in a safe state during the update process;

- For the execution process of over-the-air updates that may affect the safe use of the vehicle, other technical measures shall be taken to ensure the safety of the vehicle during the update process;
- For vehicle over-the-air updates that may fail or have errors, ensure that the on-board software update system is restored to a previously available version or the vehicle is in a safe state in a timely manner.

7.1 Filing for technical service activities based on over-the-air update technology

The time requirements for manufacturers to file technical service activities based on over-the-air update technology are as follows.

7.1.2 Filing contents

When a manufacturer records a technical service activity based on over-the-air update, the content of the record includes basic vehicle information, basic update service information, update package information, cloud platform information and safety protection information.

7.2.1 Filing time

The time requirements for manufacturers to file recall activity based on over-the-air update are as follows.

- The manufacturer shall complete the recall plan filing in accordance with the requirements of the recall authority within 5 working days after confirming the defect or emission hazard;