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

GB/T 28219.1-2025

Replacing GB/T 28219-2018

**Intelligentization technology requirements and evaluation for
intelligent household appliances - Part 1: General requirements**

智能家用电器的智能化技术要求和评价 第1部分：通用要求

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Foreword

This Standard is drafted in accordance with stipulations in GB/T 1.1-2009.

This Standard serves as a replacement of GB/T 28219-2011 General Rules of Intelligentization Technology for Intelligent Household Appliances. In comparison with GB/T 28219-2011, there are several main technical changes as follows.

- The definition of the terms of intelligent technology and intelligent household appliances is modified (please refer to 3.6, 3.8; 3.3 and 3.1 in Version 2011);
- The terms and relevant definitions of intelligent features (3.2), self-learning (3.2.1), self-adaptation (3.2.2), self-coordination (3.2.3), self-diagnose (3.2.4), self-interference (3.2.5), self-organization (3.2.6), self-correction (3.2.7), fuzzy control (3.3.1), neural network control (3.3.2), expert control (3.3.3), intelligent control system structure (3.4), feedforward structure (3.4.1), feedback structure (3.4.2), distributed structure (3.4.3), hierarchical structure (3.4.4), self-subject (3.4.5) and multi-subject structure (3.4.6) are deleted;
- The terms of intelligence (3.1), perception (3.2), decision making (3.3), implement (3.4), studying (3.5), intelligent ability (3.7), intelligent household appliances system (3.9), intelligent home (3.10), component (3.11), service platform (3.12), interconnection and interoperability (3.13), sensitive data (3.14) and intelligent index (3.15) are added;
- The content in Chapter 4 "Detection and Evaluation" is deleted; the title of this chapter is modified into "Requirements";
- The requirements of intelligent household appliances, intelligent household appliances system and intelligent home in electrical appliance safety are added (please refer to 4.1.1);

- The requirements of intelligent household appliances, intelligent household appliances system and intelligent home in information security are added (please refer to 4.1.2);
- The requirements of intelligent household appliances, intelligent household appliances system and intelligent home in electromagnetic compatibility are added (please refer to 4.1.3);
- The requirements of intelligent household appliances, intelligent household appliances system and intelligent home in interconnection and interoperability are added (please refer to 4.2);
- The requirements of intelligent household appliances, intelligent household appliances system and intelligent home in overall layout are added (please

Introduction

Intelligent household appliances, intelligent household appliances system and intelligent home shall be able to bring new feelings and experience to users. This kind of new feelings and experience shall be impossible or unattainable when users are using non-intelligent products.

Intelligent household appliances, intelligent household appliances system and intelligent home shall enable users realize certain goals with less worries, time, energy and cost, or replace human beings to accomplish certain difficult or impossible missions.

In consideration of the industrial development stage, requirements and corresponding evaluation methods and guidelines are proposed merely from several aspects of intelligent household appliances, intelligent household appliances system and intelligent home. These aspects include. security, interconnection/interoperability, overall layout, intelligent ability, intelligent functional effect, designation and description, etc.

Likewise, in consideration of the industrial development stage, requirements and corresponding evaluation methods and guidelines are proposed merely from two aspects of the degree of intelligence of intelligent household appliances, intelligent household appliances system and intelligent home. intelligent ability and intelligent functional effect.

The requirements and evaluation of intelligent ability are centralized in four characteristics, namely, perception, decision making, implement and studying. The requirements and evaluation of intelligent functional effect are centralized in the support and management of the demands from three aspects, namely, users' demands, household demands and manufacturers' demands.

The requirement of supporting and managing users' demands is proposed under the object of human beings' feelings and experience.

The requirement of supporting and managing household demands is proposed under the

object of residential environment and indoor facilities. However, the effect of supporting and managing household appliances' demands is ultimately reflected in human beings' feelings and experience.

The requirement of supporting and managing manufacturers' demands is proposed under the object of manufacturers. Its objective is to reflect the improvement that manufacturers could obtain in the supply of products, services and operation to the market and users through the application of intelligent technology.

Likewise, in consideration of the industrial development stage, within the functional scope of supporting and managing the listed demands for intelligent household General Technology Requirements for Intelligent Household Appliances

1 Scope

This Standard specifies the terms, definitions, general technology requirements and evaluation methods and guidelines of intelligent household appliances, intelligent household appliances system and intelligent home for household and similar purposes.

This Standard is applicable to the design, integration, identification and evaluation of intelligent household appliances, intelligent household appliances system and intelligent home for household and similar purposes.

Intelligent electrical appliances that do not aim at general household application, but could still constitute dangers to the public, or shall be applied under similar working environment and conditions, are also within the scope of this Standard. For instance, intelligent electrical appliances that are about to be operated by unprofessional staff in stores, the light industry and farmlands.

NOTE. products that are applicable to this Standard also include.

- Intelligent service robot for household and similar purposes;
- Wearable intelligent equipment for household and similar purposes;
- Household electrical appliances that apply network technology, etc.

2 Normative References

GB/T 4706

GB/T 5296.2

3 Terms and Definitions

The following terms and definitions are applicable to this document.

Intelligent index refers to an expression and measurement of the degree of intelligence of

intelligent household appliances, intelligent household appliances system or intelligent home.

4.1.1.1 Electrical safety of intelligent household appliances

On the basis of satisfying GB 4706.1 and corresponding special requirements, intelligent household appliances shall also comply with the following requirements.

- a) In terms of supervised intelligent household appliances, there shall be measures to prevent the connection with external control device, which would change their (being supervised) attributes, including measures against attribute (being supervised) change through network operation.
- b) Intelligent household appliances shall be equipped with the measure of identifying and alerting the received commands that might cause personal injury, and damage to property or the environment. Intelligent household appliances shall also be equipped with the measure of refusing to carry out the commands before receiving any further confirmation;
- c) Intelligent household appliances shall be equipped with the measure of identifying and alerting commands from unspecified sources, and the measure of refusing to carry out the commands before receiving any further confirmation;
- d) Intelligent household appliances shall be equipped with the measure of identifying and handling incomplete commands and false commands;
- e) Intelligent household appliances shall be equipped with the measure of guaranteeing no personal injury, or damage to property or the environment under the circumstance when there are changes in the operating status (mode and form) and motion state (range, strength, path and locus), and unforeseen circumstances, such as terminated power supply, physical barrier and program failure, etc.;

NOTE. examples of the above injury and damage include. walkable service robot tumbles and hurts people because of physical barrier; robot with mechanical arms hurts people with excessively large motion range because of program failure; wearable neck massager chokes users because of program failure, etc.

- c) Guarantee that the conformity in 4.1.1 is not impaired.

4.1.3 Electromagnetic compatibility

The electromagnetic compatibility of components in intelligent household appliances, intelligent household appliances system and intelligent home shall comply with requirements in relevant standards under the application of intelligent technologies.

Solutions of intelligent household appliances system and intelligent home shall be equipped with the measure of preventing from inconformity of electromagnetic compatibility of relevant components due to the integration of several components.