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

GB/T 48000.3-2026

**Standard digitalization - Part 3: Requirements for ontology
modelling**

标准数字化 第3部分：本体建模要求

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document is Part 3 of GB/T 48000, "Digitalization of Standards". GB/T 48000 has already published the following parts.

1. General Guidelines;
2. Reference Architecture Model;

3.Ontology Modeling Requirements;

4.Collaboratively Developing Requirements. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the National Standards Digitalization Standardization Working Group (SAC/SWG29). This document was drafted by: Shandong Provincial Computing Center (National Supercomputing Center in Jinan), China National Institute of Standardization, and Tongfang Knowledge Network Digital Technology. Institute of Biomedical Engineering, Chinese Academy of Sciences; China Railway Construction Heavy Industry Corporation Limited; China Datang Corporation Science and Technology Research Institute Co., Ltd. East China Electric Power Research Institute, Shenzhen Sihe Technology Co., Ltd., Qingdao Zhongxin Huamei Plastics Co., Ltd., Nanjing University of Science and Technology, Jiangsu Zhong Tianke Technology Co., Ltd., Guangzhou CESI Standard Testing and Research Institute Co., Ltd., Zhongshan Shenzhong Standard Quality Research Center, China National Institute of Metrology Xue, Shandong Shanke Digital Economy Research Institute Co., Ltd., Shandong Provincial Institute of Standardization, Zhejiang University, Zhejiang Geely Holding Group Co., Ltd. China Electronics Technology Standardization Institute and Binzhou Jinyi Equipment Co., Ltd. The main drafters of this document are. Li Min, Liu Xize, Li Gang, Sun Jinyang, Zhou Mingle, Li Yuanzhen, Han Mengxue, Wang Yiyi, Tao Degang, and Yao Bo. Ge Yongxin, Sun Hongjun, Zhang Yuandong, Niu Nana, Hao Guanya, Huang Shenghua, Gao Jianguo, Hong Penghui, Liu Hongyang, Zhang Bingyan, Xu Xinsheng, Qi Ning, Du Zhanhao, Yang Xiaogong, Wang Yanan, Pu Jiangbo, Gu Xinjian, Huang Minghao, Liu Yang, Qi Yong, Yin Qingyun.

With the advancement of the digital, networked, and intelligent transformation of the economy and society, the digitalization of standards has become an inevitable trend. Various entities need to... We need to independently carry out standard digitization activities to meet the needs of standardization work in the new era and better leverage the role of standards. However, at present, there is a lack of openness... Guidance documents for exhibition-related activities, outlining how to identify key aspects and priorities of standard digitization, rationally utilize key technologies, and create a complete standard. Provide rules for accurate activity records, etc. GB/T 48000 "Standards Digitization" is a fundamental and universal standard for carrying out standards digitization activities in my country, aiming to improve the standards digitization system. The system for the conceptualization, development, and application of standards should be standardized and guided to ensure the orderly progress of standardization work, promote technical exchanges, and avoid duplication of related research. The project is planned to consist of six parts.

1.General Guidelines. The aim is to provide the overall principles and basic framework for conducting standardized digitization activities, and to clarify the standards for digitization. The main aspects of chemical activities, as well as recommended practices and key

technologies.

2.Reference Architecture Model. The aim is to propose a reference architecture model to describe standard digitization activities, and to support standard digitization. The system architecture and activity boundaries are clearly and visually expressed, providing reference and guidance for the planning and organization of related activities.

3.Ontology Modeling Requirements. The aim is to determine the construction methods and requirements for standard ontologies in standard digitization activities, and to provide a unified approach. A unified conceptual framework ensures the accuracy and interoperability of standard digitization.

4.Collaborative Development Requirements. The aim is to establish relevant rules for collaborative standard development in standard digitization activities, ensuring that standards... Collaborate to develop standardized procedures for carrying out the work.

5.Maturity Assessment. The aim is to provide a standardized, digitized maturity assessment system, proposing assessment indicators, procedures, and methods. Laws, etc.

6.Organization and Process Management. The aim is to provide procedures and methods for organizing and managing the processes of conducting standardized digitalization activities. Laws, etc. This document is Part 3 of GB/T 48000 "Standards Digitization", focusing on the construction of standard ontologies in standards digitization activities, and specifically addressing... This paper addresses issues such as inconsistent semantic understanding and difficulties in knowledge integration encountered in standard digitization activities, and clarifies the key elements and methods of standard ontology modeling. This document provides a systematic solution. It references the current standard's structured format and considers the current level of semantic markup, taking into account the standard's limitations. The modular construction requirements of the system are addressed from different perspectives, including metadata, standard structure, standard technical content, and standard construction procedures, providing a unified approach. Conceptual system. Standard ontology is built upon the understanding of standard-related concepts and data, as well as semantic heterogeneity between systems, and aims to achieve semantic sharing and interoperability. Based on this foundation, the purpose of this document is to achieve accurate and consistent parsing and transmission of standard information, and to guide the integration of heterogeneous standard ontologies. The construction of the integration and mapping mechanism provides the necessary common technical foundation for achieving semantic-level interoperability and promotes the integration of standard information. Enjoy and interoperate. Standard Digitalization Part

1 Scope

GB/T 48000.3-2026 is the Chinese national standard covering building the ontology behind a machine-readable standard - the classes, properties and relations that turn a requirement

written in prose into something a machine can reason over, and the rules for naming, versioning and reusing them. At 22,000 words, Part 3 of the series and a first edition, with Part 4 on collaborative development. It was issued on 28 January 2026 and has been in force since 1 August 2026, as a first edition. The document is under the responsibility of the Standardization Administration of China. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the relevant requirements for constructing standard ontologies in standard digitization activities, including general requirements for ontology modeling and entity types. The definition, entity type attributes, ontology axioms, extension methods, etc. This document applies to the construction and application of ontologies in the digitization of guiding standards.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document. GB/T

3 Terms and Definitions

The terms and definitions defined in GB/T 42131-2022, as well as the following terms and definitions, apply to this document.

3.1 Ontology A model that represents entity types and the relationships between entity types, as well as entity type attribute types and their associations.

Note. The goal is to capture knowledge in the relevant domain, identify commonly accepted vocabulary within that domain, describe the semantics of entities through relationships between them, and provide insights into... A shared understanding of the knowledge in this field. [Source: GB/T 42131-2022, 3.8, with modifications]

3.2 Application areas of standardization activities are categorized by professional technology, industry, or social management scope. Examples include fields such as medical standards and petroleum standards.

Note. Standards fields are labeled according to the International Classification of Standards (ICS), the Chinese Classification of Standard Documents (CCS), or industry classification systems, depending on the specific organization or project. The classification system has been expanded.