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

GB/T 45220-2025

**Multi-entity profile system for mass customization - Reference
architecture**

大规模定制多主体画像系统 参考架构

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting is required. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee for Standardization of Automation Systems and Integration (SAC/TC 159). This document was drafted by: Beijing Institute of Automation of the Mechanical Industry Co., Ltd., Qingdao University of Science and Technology, and Kaos Industrial Intelligence Research Institute (Qingdao) Co., Ltd., Harbin Institute of Technology (Weihai), China Academy of Mechanical Science Group Co., Ltd., Shandong University, Huawei Technology Co., Ltd., Qingdao Kute Intelligent Co., Ltd.,

Peking University, and Dongguan University of Technology. The main drafters of this document are. Qin Xiugong, Tao Ye, Chu Dianhui, Yin Zuozhong, Wang Haidan, Gao Jing, Tang Cong, Lu Xiaoping, Li Hui, Tu Zhiying, Ren Taolin, Pan Li, Zhang Xiaolu, Teng Shaodong, Zhang Liqiang, Zhong Xiao, Yan Meili, Lin Huiping, Wu Xuan, Sun Xun, Xue Jingwan, Yang Qiuying, Huang Shilong, and Pan Xiaoheng. Reference architecture for large-scale customized multi-agent portrait system

1 Scope

GB/T 45220-2025 gives the reference architecture for a multi-entity profile system supporting mass customisation. Mass customisation only works if the system knows enough about several parties at once: the customer and their preferences, the product and its configurable features, the production resources and their capability, and the suppliers and their constraints, and the profiles of all of them have to be built, kept current and reasoned over together. The standard sets out the concept of multi-entity profiling for mass customisation and then the architecture: the subject dimensions and the entities profiled, the profile model and its attributes and relationships, the data sources and the construction, updating and quality management of the profiles, the functional components of the system and their interactions, the service interfaces exposed to the customisation and production systems, and the requirements on the platform, on interoperability and on the security and privacy of the personal data involved. It takes effect on 1 August 2025.

This document provides the types, components, and reference architecture of systems that support large-scale customized multi-agent portraits. This document is applicable to the planning, construction, acceptance and use of multi-agent portrait systems in large-scale customization mode.

2 Normative references

This document has no normative references.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Mass customization According to the personalized needs of customers, we use standardization, modularization, information technology and advanced manufacturing technology to reduce the internal Diversity, the process of increasing customer-perceived external diversity to provide customized products and services at low cost, high quality and efficiency. Example. When ordering a personal computer, the customer specifies the processor speed, amount of memory, hard disk size and speed, characteristics of the removable storage device, and many other options. items, while PCs are assembled on the same production line at a low cost. [Source: GB/T 25109.1-2010, 3.2.10, modified]

3.2 multi-entity profile Provide unified attribute description for various entities such as "resources", "customers" and "products".

3.3 User profile An information data model that carries the social attributes, living habits, and consumption behaviors of customers (or customer groups).

3.4 Product profile An information data model of a product's functions, design, quality, price and other attributes.

3.5 resource profile A data model of personal or corporate entity information that provides design, manufacturing, service, and other capabilities.

3.6 Interaction Two-way information exchange between people, people and devices, and devices and devices. [Source: GB/T 42134-2022, 4.2]

3.7 Precision Marketing Through data mining, customer segmentation, personalized recommendation and other methods, we provide customized products and services for different customer groups. Marketing strategies to improve market response speed and conversion rate.