

ICS 25.040.40

CCS N10



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

GB/T 43201.5-2023

**Industrial automation systems and integration - Standardized
procedures for production systems engineering - Part 5:
Manufacture change management**

工业自动化系统与集成 生产系统工程的标准化程序 第5部分：制造变更管理

Issued on: September 7, 2023

Implemented on: April 1, 2024

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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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 5 of GB/T 43201 "Standardized Procedures for Industrial Automation Systems and Integrated Production System Engineering". GB/T 43201 "Standardized Procedures for Industrial Automation Systems and Integrated Production System Engineering" has released the following parts.

2. Reference process for seamlessly connecting production plans;

3. Information flow in the production planning process;

4. Key performance indicators in the production planning process;

5. Manufacturing Change Management. This document is equivalent to ISO 18828-5:2019 "Standardized Procedures for Industrial Automation Systems and Integrated Production System Engineering Part 5" Part. Manufacturing Change Management. Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is proposed by China Machinery Industry Federation. This document is under the jurisdiction of the National Automation System and Integration Standardization Technical Committee (SAC/TC159). This document was drafted by: China Institute of Standardization, Ningbo Lian Technology

Co., Ltd., Harbin Yulong Automation Co., Ltd., Cable AOS (Guangdong) Glass Technology Co., Ltd., Jiangsu Yishi Precision Technology Co., Ltd., Shenzhen Lihexing Co., Ltd., China Che Zhuzhou Electric Locomotive Co., Ltd., Cixi Dahua Electric Co., Ltd., Guangdong Hetong Jianye Technology Co., Ltd., Guangzhou Fengjiang Microelectronics Subsidiary Co., Ltd., Okada Seiki Danyang Co., Ltd., Hebei Huate Auto Parts Co., Ltd., Ningxia Juneng Robot Co., Ltd., Shenzhen Defulai Intelligent Technology Co., Ltd., Nanjing Panda Electronic Equipment Co., Ltd., Xuzhou Zhongkuang Hengyang Technology Co., Ltd., Hebei Huatong Heavy Industry Industrial Machinery Manufacturing Co., Ltd., Guangdong Hengxin Intelligent Equipment Co., Ltd., Shandong Juxin Special Purpose Vehicle Manufacturing Co., Ltd., Oriental Hitachi (formerly (Du) Electronic Control Equipment Co., Ltd., Shijiazhuang Julit Machinery Co., Ltd., and Shanghai Wodian Industrial Automation Co., Ltd. The main drafters of this document: Xu Kaicheng, Wang Zhiqiang, Qiu Yi, Zhao Jinxiao, Kong Weiguang, Gao Dianzhu, Chen Yong, Li Guanhong, Zhou Yi, Xu Aiming, Hong Yan, Pan Hongquan, Tu Guoquan, Wang Lihua, Xia Hengbao, Chen Zian, Zhang Chunli, Liu Tao, Yue Gaofeng, Gao Runshu, Li Songling, Cai Lianyong, Luo He, Li Zhibo, Wang Huiliang, Lai Chengyi, Huang Lizhi, Lin Tuqiang, Yang Qinghai, Liu Shouhua, Yin Shurui.

GB/T 43201 "Standardized Procedures for Industrial Automation Systems and Integrated Production System Engineering" aims to provide a standard for production system engineering. a standardized procedure. GB/T 43201 defines a framework involving production processes, information flow, key performance indicators and manufacturing changes. shelf. GB/T 43201 consists of the following 5 parts.

1. Overview. The purpose is to provide an overall framework for standardized procedures in production systems engineering, and at the same time introduce the relationship between.
2. Reference process for seamlessly connecting production plans. The purpose is to provide a reference planning process designed to establish an understanding of production Prepare a consistent understanding of the production planning process for life cycle stages. This reference planning process is embedded in the product design process and between production processes.
3. Information flow in the production planning process. The purpose is to provide the main flow of information in production planning. These information flows Derived from process steps identified in the relevant context of the reference planning process. Information flow originates from the reference planning process. they represent provides an information-oriented view of the overall planning process, taking into account both planning disciplines and planning phases. The process interface includes The process stages include conceptual plan, outline plan and detailed plan.
4. Key performance indicators in the production planning process. The purpose is to provide key performance indicators during the production planning phase Target usage. The key performance indicators described in this section mainly relate to the performance tracking

of the planning process of the engineering production system. Its purpose is to improve quality monitoring during standardized production processes.

5. Manufacturing Change Management. The purpose is to provide the manufacturing change process and its management. In practice, manufacturing and assembling products The required production systems are also subject to many different changes. Some of them are designed specifically to improve the efficiency of production systems planned and implemented. The process model of manufacturing change management is the main content of this part. The business environment is becoming increasingly active, and it is rapidly changing from a buyer's market to a seller's market, gradually increasing the complexity companies face in the product creation process. Complexity. Shortened product life cycles, expanded program scope across a global program network, and an unwavering commitment to process stability and quality Expectations, all of which make change management during product creation an important success factor for internationally active manufacturers. some of them Departments, such as product development departments and related product data management departments, manufacturers have responded to these developments by establishing technical support to ensure Ensure that change-driven management is provided during the product development process. Coordination and structural mapping of the above product changes (Engineering Change Management, ECM) Only part of the relevant change process that occurs in the creation of digital products is covered. Although ISO 10303, ISO 15531, ISO 19439 and IEC 62264 provides several data models, but the current content of this document focuses on the area of production planning. Since there will be major issues during the planning process Due to quantitative changes, heterogeneous information technology (IT) systems and data models are commonly used. The data scheme in this document illustrates a general approach Methods used to structure data and represent basic object types for manufacturing change management. In fact, the products required for product manufacturing and assembly The product system will also go through many different changes. Some of these changes were planned in advance and implemented to improve efficiency. Rate. But other changes are subject to less structured or planned processes, and their actual impact and follow-up actions cannot be fully predicted. for all For these types of change measures, generally speaking, the applicable documentation of the production system and the actual production status will be temporarily or permanently inconsistent. To, that is, asynchronous. The manufacturing change management of the production system is shown in Figure 1. Figure

1 Background of manufacturing change management Plan files provide applicable documentation for the creation, debugging, and operation of a production system. At the start of production, planning department documents and defines It's the reference for everything. Often new measures emerge that are more practical than those originally planned and are eventually implemented. In Appendix A Figure A.1 illustrates how the actual state of a system deviates from the planned state over time. There are many different situations that can cause deviations from the plan planning status. For example, continuous

improvement of a process usually reduces the basic time required to complete the process, thereby directly improving its efficiency. Alternatively Make completely different adjustments, such as those related to ergonomics or processing capabilities. These cannot be mapped and evaluated intuitively. this In addition, factors triggering changes may vary widely and may be identified and proposed by various parties. From the initial production process implementation to Many of the changes introduced represent the actual manufacturing process at any given time. Adaptability of the manufacturing process in the context of the overall production system is the key to competitiveness. Typically, annual demands for efficiency improvements across the board create a strong need for streamlining. In order to consolidate adaptation and optimization ization process, planning documents will deviate from the actual state of the production system, i.e. all producers will experience their manufacturing processes to some extent Departure from original plan. In order to carry out tests, evaluate and achieve the goals set in terms of quality, time required and cost-effectiveness, continuous Compare plans to actual status. Any changes to the manufacturing process and plans occur in an iterative process and require input from participants agree. Industrial automation system and integrated production system engineering Standardized Procedures Part

1 Scope

GB/T 43201.5-2023 is Part 5 of the Chinese series on standardised procedures for production systems engineering, and covers manufacturing change management. A change to a product after the line is built is the most expensive kind: it touches the process plan, the tooling, the fixtures, the programs, the quality plan and the parts already in the pipeline, and the failures are almost always failures of propagation rather than of decision - somebody was not told. The standard gives a process-oriented view of change management and then describes each process in the chain in detail, from the raising of the change through its assessment, decision, implementation and verification, together with the roles involved, with informative annexes giving the detailed process, the connection between the process and the data it touches, and a timing diagram. It took effect on 1 April 2024.

This document specifies a formal description of the Manufacturing Change Management (MCM) process, providing a comprehensive mapping of changes between production planning and operations and Processing provides organizational and technical solutions. This document is intended to consistently capture and track change actions and to reasonably anticipate and coordinate plans and Competencies required for change processes in production departments. This paper presents a data-oriented view of manufacturing change management (MCM) implementation. The most important aspect of data-oriented view is that Central change elements are linked to the objects of the digital factory (i.e. processes, products and resources). Manufacturing Change Management (MCM) and the differences presented in this document The basis of the perspective is the