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

GB/T 43018.1-2023

**Interconnection and interoperation for textile equipment - Part
1: General technology requirements**

纺织装备互联互通与互操作 第1部分：通用技术要求

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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 1 of GB/T 43018 "Textile Equipment Interconnection and Interoperability". GB/T 43018 has released the following part.

1. General technical requirements. 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 the China Textile and Apparel Industry Federation. This document is under the jurisdiction of the National Textile Machinery and Accessories Standardization Technical Committee (SAC/TC215). This document was drafted by: China Textile Machinery Association, Donghua University, Zhejiang Sci-Tech University, Wuyang Textile Machinery Co., Ltd., Tianjin University of Technology, Saite Global Machinery (Qingdao) Co., Ltd., Jingwei Textile Machinery Co., Ltd., Hengtian Heavy Industry Co., Ltd., China Textile Research Institute Research Institute Co., Ltd., China Hengtian Lixin International Co., Ltd., Beijing Institute of Technology (Beijing) Science and Technology Development Co., Ltd., Shandong Rifa Textile Machinery Co., Ltd., Changzhou Xinchuang Intelligent Technology Co., Ltd. The main drafters of this document. Zhang Jie, Zhou Yaqin, Hu Xudong, Zhao Qi, Chen Yunjun, Wang Yong, Liu Dan, Shen Bo, Liu Zhifeng, Wang Shui,

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The GB/T 43018 "Textile Equipment Interconnection and Interoperability" series of standards is planned to be divided into 7 parts.

1.General technical requirements. The purpose is to analyze the overall architecture, communication protocols, and information of textile equipment interconnection and interoperability. Security, common information model, data dictionary and mapping rules for information models are required.

2.Spining. The purpose is to analyze the cotton spinning equipment network architecture, blowroom and carding equipment information model, and strip and roll equipment information model. model, combing machine equipment information model, draw frame equipment information model, roving frame equipment information model, ring spinning machine equipment information model Model, automatic winding machine equipment information model and doubling machine equipment information model put forward requirements.

3.Chemical fibers. The purpose is to put forward requirements for the information model of the chemical fiber full-process network architecture and equipment interconnection.

4.Knitting. The purpose is to put forward requirements for the network architecture, information model and data dictionary of knitting equipment.

5.Nonwovens. The purpose is to analyze the nonwoven equipment network architecture, information model, and feed opening, mixing, web forming, and laying Information models for web, fixed web, spunbond, melt-blown and other process equipment are required.

6.Machine weaving. The purpose is to put forward requirements for the network architecture, information model and data dictionary of weaving equipment.

7.Dyeing and finishing. The purpose is to monitor the network, information model and data type of typical woven fabric continuous dyeing and finishing intelligent equipment. Request. Textile equipment interconnection and interoperability Part

1 Scope

GB/T 43018.1-2023 is Part 1 of the Chinese series on the interconnection and interoperation of textile equipment. A Chinese spinning or weaving mill runs hundreds of machines from a dozen makers, each with its own controller and its own idea of what a production count means, which is why mill-wide monitoring has historically been retrofitted with sensors rather than read from the machines. Part 1 sets the common ground: the system architecture and the information exchange between its parts, then the basic requirements - the communication protocol, the information security, the general

information model, the data dictionary and the rules for mapping the information model onto a protocol - with an informative annex on the typical equipment covered. It took effect on 1 April 2024.

This document specifies the interconnection and interoperability architecture of textile equipment for spinning, chemical fiber, weaving, knitting, nonwovens, dyeing and finishing equipment, etc. It also stipulates the textile equipment communication protocol, information security, general information model, data dictionary and information model mapping rules. Basic requirements for equipment interconnection and interoperability. This document is suitable for guiding the design and integration of textile equipment interconnection and interoperability systems, as well as the construction of textile smart factories.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 36324 Information security technology industrial control system information security classification specification

GB/T 39561.1-2020 CNC equipment interconnection and interoperability Part

3 Terms and definitions

The terms and definitions defined in GB/T 39561.1-2020 and the following apply to this document.

3.1 interconnection There is at least one physically compatible connection line between the two devices, and the communication protocols between the devices are compatible and can understand each other. Understand the semantics of the other party's information resources and conduct end-to-end data exchange. [Source: GB/T 39561.1-2020, 3.1.3]

3.2 interoperation Devices exchange information through relevant information models and utilize this information into their own functions to achieve collaboration between devices. Work. [Source: GB/T 33899-2017, 3.4, with modifications]

4 Abbreviations

The following abbreviations apply to this document.