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

GB/T 42451-2023

**Intelligent manufacturing - Industrial cloud service -
Capabilities assessment**

智能制造 工业云服务 能力评估

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Foreword

This document was issued on 17 March 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 October 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 42451-2023 covers how the capability of an industrial cloud service is assessed - a service that delivers manufacturing functions such as planning and scheduling through an interface rather than as software installed on a plant's own machines. Clause 5 gives the framework that holds the two halves of the assessment together. Clause 6 sets the content: the business capabilities the service offers, and those capabilities as they fall across the stages of the life cycle, so that a provider strong at one stage is not credited with the whole of it. Clause 7 gives the process in four stages - assessment preparation, scheme preparation, implementation and analysis - which is what makes two assessments carried out by different assessors comparable rather than two opinions. A manufacturer moving

planning or scheduling onto someone else's platform is handing over work that stops the line when the platform stops, and the vendor's own account of what its platform can do is not something a purchasing department can check. A stated framework and a stated process give both sides the same list to argue from. For industrial cloud service providers, manufacturers selecting one, and the assessment bodies and consultants who run the review.

This document proposes a framework for the capabilities assessment of industrial cloud service,

stipulates the assessment content of industrial cloud service business capabilities in different

life cycles and the assessment content of each business capability, and provides a process of the

capabilities assessment of industrial cloud service.

This document is applicable to the guidance of the capabilities assessment of industrial cloud

service.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in this text. In terms of references with a specified date, only

versions with a specified date are applicable to this document. In terms of references without a

specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 37724-2019 Information Technology - Industrial Cloud Service - Capabilities General Requirements

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 industrial cloud service

Industrial cloud service refers to one or multiple capabilities provided through an interface defined by industrial cloud.

3.2 industrial cloud service provider

Industrial cloud service provider refers to a participant providing industrial cloud service.

3.3 industrial cloud service partner

Industrial cloud service partner refers to a participant supporting or assisting the activities of

industrial cloud service providers, the activities of industrial cloud service customers, or both.

3.4 documented information

Documented information refers to information and its media that an organization or individual

needs to control and maintain.

NOTE: documented information is not limited to format, media and source.

3.5 business capability

Business capability refers to the capability of industrial cloud service provider in providing industrial cloud services throughout the entire product life cycle, including a variety of production activities.

NOTE: business capabilities mainly include R&D and design capabilities, procurement capability,

production and manufacturing capabilities, testing capability, logistics capability, marketing capability and after-sales capability.

4 Abbreviations

The following abbreviations are applicable to this document.

APS: Advanced Planning and Scheduling

OLE: Object Linking and Embedding

OPC: OLE for Process Control

SCADA: Supervisory Control And Data Acquisition

5 Framework

The framework for the capabilities assessment of industrial cloud service includes the content

and process of capabilities assessment of industrial cloud service. The content of the capabilities

assessment of industrial cloud service is extended in accordance with the business capability

division and business capability life cycle stipulated in GB/T 37724-2019. In terms of four capability life cycle stages: capability planning, capability building, capability operation and capability assessment, as well as seven business capabilities: R&D and design, procurement,

production and manufacturing, testing, logistics, marketing and after-sales, the assessment elements are respectively determined. The process of the capabilities assessment of industrial

cloud service includes assessment preparation, scheme preparation, implementation of assessment and analysis of assessment. The framework for the capabilities assessment of industrial cloud service is shown in Figure 1.

Capability building means that the industrial cloud service provider organizes resources and

capabilities in accordance with the specific content of capability planning, and accesses industrial cloud service, so as to provide services to users.

The assessment elements of capability building shall at least include:

- a) With the team, management system, management means and management tools to carry out capability building;
- b) Physical or virtual resources form a resource pool, so as to provide scalable, multi-tenant, elastic, on-demand services and network access;
- c) In accordance with the reports and schemes formed in the capability planning stage, carry out capability building, and with relevant documented information;
- d) Form phased reports on capability building. The content of the phased reports shall include the current situation, problems and difficulties of capability building;
- e) Issue an acceptance inspection report on capability building. The content of the acceptance inspection report shall include the results of capability building and confirm the capability building scheme;