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

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**Industrial automation systems and integration - Integration of life-cycle
data for process plants including oil and gas production facilities - Part
13: Integrated asset planning life-cycle**

工业自动化系统与集成 流程工厂（包括石油和天然气生产设施）生命周期数据集成 第13部分：集成资产计划生命周期

(English Translation)

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Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative reference documents	
3 Terms, definitions, symbols and abbreviations	
3.1 Terms and Definitions	
3.2 Abbreviations	
3.3 Symbol	
4 Hierarchies and extensions of integrated asset planning lifecycle data	
4.1 Levels of integrated asset planning lifecycle data	
4.2 Documents at each level	
4.3 Use of each level	
4.4 Extensions for specific engineering applications	
4.5 Simplification of progress application view	
5 Representation of planning data	
5.1 Basis for the method	
5.2 Basic plan objects	
5.3 Progress	
5.4 Planning activities	
5.5 Actual activities to meet needs	
5.6 Activity decomposition	
5.7 Activity classification	
5.8 Activity Resources	
5.9 Participants in the event	
5.10 Suspension	
5.11 Event date and time	
5.12 Activity duration	
5.13 Progress Metrics	
5.14 Events and Milestones	
5.15 Temporal relationships between activities and events	
5.16 Calendar	
5.17 Object identification	

5.18 Work Order

5.19 Facility areas and grounds

6 Progress application view

6.1 Use of progress application view model

6.2 Simplification of ISO 15926 ontology

6.3 Actual activities in the progress application view model

6.4 Data plan for progress application view

6.5 User-defined attributes in progress application views

Appendix A (Normative) Ontology of Integrated Asset Planning Life Cycle

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 GB/T (Z) 18975 "Industrial automation systems and integrated process plants (including oil and gas production facilities) Life Part 13 of Periodic Data Integration. GB/T (Z)18975 has released the following parts.

---Part 1: Overview and basic principles;

---Part 2: Data Model;

---Part 4: Initial reference data;

---Part 10: Compliance testing;

---Part 12: Lifecycle integration ontology represented by Web Ontology Language (OWL);

---Part 13: Integrated asset planning life cycle.

This document is equivalent to ISO 15926-13:2018 "Industrial automation systems and integrated process plants (including oil and gas production) Facilities) Lifecycle Data Integration Part 13: Integrating the Asset Planning Lifecycle.

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

Introduction

GB/T (Z) 18975 is the process industry life cycle data integration standard. Its purpose is to provide a common language for computer systems to Achieve interoperability.

Integration consists of the following parts.

---Part 1: Overview and basic principles. The purpose is to describe the scope and functions of GB/T (Z) 18975 and its basic principles.

---Part 2: Data Model. The purpose is to define a conceptual number for computer representation of process plant life cycle technical information.
data model.

---Part 3: Geometric and topological reference data. The purpose is to specify the geometry and topology data that can be recorded using Part 2.

Ho and topology concepts.

---Part 4: Initial reference data. The purpose is to provide an initial set of core reference data items for a process factory.

---Part 6: Reference data development and verification methods. The purpose is to provide a method for managing process plant reference data.

---Part 7: Distributed system integration implementation method. template method. The purpose is to provide a method based on the data model in Part 2 Template method for row data integration.

---Part 8: Distributed system integration implementation method. Network Ontology Language (OWL) implementation. The purpose is to provide for the use of Part 7 it includes specifications for data integration using RDF (Resource Description Framework) and OWL (Web Ontology Language).

---Part 10: Compliance testing. The purpose is to describe the compliance with each part of GB/T (Z) 18975.

---Part 11: Simplified industrial use of reference data. The purpose is to use RDFS (Resource Description Framework schema, RDF Schema) defines a simplified approach to process industry usage of reference data.

---Part 12: Lifecycle integration ontology represented by Web Ontology Language (OWL). The purpose is to specify the use of OWL representation an ontology that integrates process plant industrial data throughout its entire life cycle.

---Part 13: Integrated asset planning life cycle. The purpose is to provide a process plant asset planning ontology and derivatives from this ontology an XMLschema (XML schema) for asset planning data exchange.

The representation of process industry facility life cycle information expressed in GB/T (Z) 18975 is specified by a general, conceptual ontology, and the ontology is suitable for Suitable as the basis for a shared database or data warehouse. GB/T 18975.2 defines this ontology, while GB/Z 18975.12 defines the OWL representation of this ontology. GB/T 18975.2 and GB/Z 18975.12 are intended to be used as definitions for other parts of GB/T

(Z) 18975 domain-specific extensions.

This ontology is designed for use with reference data, that is, a representation of information common to many users, production facilities, or both.

Standard instance. Support for specific lifecycle activities depends on using appropriate reference data in conjunction with the ontology.

This document specifies a generic, conceptual ontology extension to support asset integration initiatives throughout the asset lifecycle. This book Physical fitness integrates planning data from disparate sources into a database.

This document uses OWL to represent this ontology, and also specifies the XSD required for machine-readable asset planning data exchange.

This document uses the following methods to deal with English technical words.

---In order to maintain the original meaning of English and facilitate understanding of the meaning of the word, each word with the meaning of entity in ISO 15926-13:2018 when English words appear as titles in this document, the Chinese translations are used. In the text, English is the main word.

When doing so, bracket the Chinese translation and place it after the English translation;

---For the computer language vocabulary such as OWL and RDF that this document matches, this document does not list Chinese translations;

---When each part of the international standard ISO 15926 is modified and adopted as my country's national standard, its number is GB/T (Z) 18975, corresponding to all parts are technically and functionally equivalent. However, considering the OWL description matching GB/T (Z) 18975, and the application Use the expression needs of various modes, entities, characteristics, attributes, functions, etc. in the software, in order to make the supporting application software easy to use in practical applications.

Various problems caused by standard conversion occur. All OWL descriptions in this document and automatic the international standard numbers in the generated files remain unchanged.

Industrial automation systems and integrated process plants (including Oil and gas production facilities) life cycle data integration Part 13: Integrated Asset Planning Life Cycle

1 Scope

This document specifies an asset planning ontology for process plants, including oil and gas production facilities, and the tools derived from this ontology for asset planning.

An XMLschema (XML schema) for production planning data exchange.

The following content falls within the scope of this document.