



BSI Standards Publication

Industrial automation systems and integration — Industrial manufacturing management data

Part 31: Resource information model

National foreword

This British Standard is the UK implementation of [ISO 15531-31:2004](#).

The UK participation in its preparation was entrusted to Technical Committee AMT/4, Industrial data and manufacturing interfaces.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Industrial automation systems and integration — Industrial manufacturing management data —

Part 31: Resource information model

*Systèmes d'automatisation industrielle et intégration — Données de
gestion de fabrication industrielle —*

Partie 31: Modèle d'information des ressources



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

[ISO 15531-31](#) was prepared by Technical Committee ISO/TC 184, *Industrial automation systems and integration*, Subcommittee SC 4, *Industrial data*.

— A complete list of parts of [ISO 15531](#) is available from the Internet at:

http://www.tc184-sc4.org/titles/MANDATE_titles.rtf

Introduction

Resources form the basis and technological foundation of any manufacturing system. The efficient use of resources is the main goal of cost management which, in turn, directly contributes to market success.

Different aspects of the resources depend on the viewpoint being considered. The choice of a specific aspect is a way of reducing complexity.

Therefore, future concepts for business process development and resource management require:

- an integrated view of the complete set of business processes and the relevant resource management activities;
- an integrated resource management including interfaces to external manufacturing unit.

NOTE external-manufacturing unit may be for example suppliers or subsidiaries.

Resource attributes and the required capabilities and capacities for manufacturing processes have to be described by data modelling, so that they can be communicated and used more efficiently for resource usage management. The means of information representation should therefore be standardized.

EXAMPLE resources attributes may be capability, capacity, and status.

In this International Standard the only aspect under consideration is the management of resources usage. The objective is to describe the resource management information to enable an unhindered flow of information between all systems and humans involved.

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Industrial automation systems and integration — Industrial manufacturing management data —

Part 31: Resource information model

1. Scope

According to the scope ISO 15531-3X series that is reminded in [annex A](#) of this document, [ISO 15531-31](#) is an introduction to the ISO 1553 1-3x series of part of [ISO 15531](#). It describes the universe of discourse of this standard as well as the resources information model. It provides the main principles used in this series of parts of [ISO 15531](#).

The following are within in the scope of this Part of [ISO 15531](#) :

- general overview of the parts 1553 1-3x series;
- definitions of terms used;
- fundamental principles used for conceptual model of resource usage management data;
- description of the resources information model (RIM);
- derivation process of identification and description of resources;
- structure of the standard and relationships between this series of parts and the others series of parts the standard is composed;
- use of standard (informative).

The following are out of the scope of this part of [ISO 15531](#) :

- detailed description of the resource information model;
- EXPRESS description of the model and related entities;
- definition of detailed level concepts and entities;

NOTE — Those three items are developed in the part 32 of [ISO 15531](#) : *Conceptual model for resources usage management data*.

2. Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[ISO/IEC 8824-1](#), *Information technology — Abstract Syntax Notation One (ASN.1) — Part 1: Specification of basic notation*

[ISO 10303-1](#), *Industrial automation systems and integration — Product data representation and exchange — Part 1: Overview and fundamental principles*

[ISO 10303-11](#), *Industrial automation systems and integration — Product data representation and exchange — Part 11: Description methods: The EXPRESS language reference manual*

[ISO 10303-41](#), *Industrial automation systems and integration — Product data representation and exchange — Part 41: Integrated generic resources: Fundamentals of product description and support*

[ISO 10303-49](#), *Industrial automation systems and integration — Product data representation and exchange — Part 49: Integrated generic resources: Process structure and properties*

ISO 13584-1, *Industrial automation systems and integration — Parts library — Part 1: Overview and fundamental principles*

[ISO 14258](#), *Industrial automation systems — Concepts and rules for enterprise models*

[ISO 15531-1](#), *Industrial automation systems and integration — Industrial manufacturing management data — Part 1: General overview*

3. Terms, definitions, and abbreviations

3.1. Terms defined in ISO 10303-1

This part of [ISO 15531](#) makes use of the following terms defined in [ISO 10303-1](#):

- conformance testing;
- data;
- data exchange;
- information;
- product;
- product data.

3.2. Terms defined in ISO 10303-11

This part of [ISO 15531](#) makes use of the following terms defined in [ISO 10303-11](#):

- entity.

3.3. Terms defined in ISO 15531-1

This part of [ISO 15531](#) makes use of the following terms defined in [ISO 15531-1](#):

- capability;
- capacity;
- construct;
- enterprise entity;
- model;
- process;
- resource;
- universe of discourse.

3.4. Terms defined in ISO 14258

- enterprise;