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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Enterprise-control system integration –
Part 4: Object model attributes for manufacturing operations management integration

Intégration des systèmes entreprise-contrôle –
Partie 4: Attributs des modèles d'objets pour l'intégration de la gestion des opérations de fabrication

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IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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ENTERPRISE-CONTROL SYSTEM INTEGRATION –

Part 4: Object model attributes for manufacturing operations management integration

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International Standard IEC 62264-4 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

The text of this standard is based on the following documents:

FDIS	Report on voting
65E/479/FDIS	65E/488/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62264 series, published under the general title *Enterprise-control system integration*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This part of IEC 62264 defines the interfaces between enterprise activities and control activities and is to be used in conjunction with IEC 62264-3.

The scope of this part of IEC 62264 is limited to defining the details of the information content of interfaces within manufacturing operations management. The scope is limited to the definition of object models and attributes for the information defined in IEC 62264-3. The goal is to reduce the effort, cost, and errors associated with implementing these interfaces.

The standard may be used to reduce the effort associated with implementing new product offerings. The goal is to have enterprise systems and control systems that interoperate and easily integrate.

This part of IEC 62264 further defines the object models and attributes involved in data exchange between activities of manufacturing operations management defined in 62264-3. The models and terminology defined in IEC 62264-3 and this part of IEC 6226

a) emphasize good manufacturing operations management integration practices during the entire life cycle of the systems;

b) can be used to improve existing integration capability of manufacturing operations management systems; and

c) can be applied regardless of the degree of automation.

Specifically, IEC 62264-3 and this part of IEC 62264 provide a standard terminology and a consistent set of concepts and models for integrating manufacturing operations management systems that will improve communications between all parties involved. Benefits produced will

d) reduce the user's time to reach full production levels for new products;

e) enable vendors to supply appropriate tools for implementing integration of manufacturing operations management systems;

f) enable users to better identify their needs;

g) reduce the cost of automating manufacturing processes;

h) optimize supply chains; and

i) reduce life-cycle engineering efforts.

IEC 62264-3 and this part of IEC 62264 may be used to reduce the effort associated with implementing new product offerings. The goal is to have manufacturing operations management systems that interoperate and easily integrate.

It is not the intent of the standards to

1) suggest that there is only one way of implementing integration of manufacturing operations management systems;

2) force users to abandon their current way of handling integration; or

3) restrict development in the area of integration of manufacturing operations management systems.

ENTERPRISE-CONTROL SYSTEM INTEGRATION –

Part 4: Object model attributes for manufacturing operations management integration

1 Scope

This part defines object models and attributes exchanged between Level 3 manufacturing operations management activities defined in IEC 62264-3.

2 Normative references

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

IEC 62264-1:2013, *Enterprise-control system integration – Part 1: Models and terminology*

IEC 62264-2:2013, *Enterprise-control system integration – Part 2: Object and attributes for enterprise-control system integration*

IEC 62264-3, *Enterprise-control system integration – Part 3: Activity models of manufacturing operations management*

IEC 61512-1, *Batch control – Part 1: Models and terminology*

IEC 61512-4:2009, *Batch control – Part 4: Batch production records*

IEC 62682, *Management of alarm systems for the process industries*

ISO/IEC 19501, *Information technology – Open Distributed Processing – Unified Modeling Language (UML) Version 1.4.2*

ISO/IEC 19505-1, *Information technology – Object Management Group Unified Modeling Language (OMG UML) – Part 1: Infrastructure*

ISO/IEC 19505-2, *Information technology – Object Management Group Unified Modeling Language (OMG UML) – Part 2: Superstructure*

ISO 8601, *Data elements and interchange formats – Information interchange – Representation of dates and times*

3 Terms, definitions, abbreviations and conventions

3.1 Terms and definitions

For the purposes of this document the terms and definitions given in IEC 62264-1 as well as the following apply.

3.1.1
batch production record
BPR
subset of the execution and business information that is retained based upon business requirements identified by the batch production record specification

Note 1 to entry: This note applies to the French language only.

[SOURCE: IEC 61512-4:2009, 3.2]

3.1.2
job list
collection of job orders for one or more work centers and/or resources for a specific time frame

3.1.3
job order
unit of scheduled work that is dispatched for execution

3.1.4
job response
information on the result of execution of a job order

3.1.5
job response list
collection of job responses for one or more work centers and/or resources for a specific time frame

3.1.6
resource relationship network
one or more expressions of a relationship between two or more resources

3.1.7
work alert
notification of a Level 3 event that does not require acknowledgement

3.1.8
work calendar
collection of work calendar entries

3.1.9
work calendar entry
information about a specific time period

3.1.10
work capability
collection of information about the resources for work for selected future and past times

3.1.11
work definition
collection of information about resources and workflow specification associated with job orders

3.1.12
work directive
type of work definition derived from a work master and used to perform a specific job order

3.1.13
work KPI
key performance indicator related to Level 3 activities

3.1.14
work master
type of work definition that is a template for work to be performed for a job order

3.1.15
work performance
collection of work responses

Note 1 to entry: This note applies to the French language only.

3.1.16
work master capability
collection of information about the resources for selected future and past times for a specific work master

3.1.17
work record
subset of the execution and business information that is retained based upon business requirements

3.1.18
work request
collection of job orders

3.1.19
work response
collection of job responses

3.1.20
work schedule
detailed schedule of MOM activities as a collection of work requests

3.1.21
workflow specification
information representing work as a pattern of activities used to orchestrate the execution of procedures

EXAMPLE A repeatable sequence of procedures, enabled by an organization of resources with defined roles corresponding to flows of mass, energy or information.

3.2 Symbols and abbreviations

BPMN	Business Process Model and Notation
BPR	Batch production record
ERP	Enterprise resource planning
ID	Identifier
KPI	Key performance indicator
MES	Manufacturing execution system
MOM	Manufacturing operations management
SOP	Standard operating procedures
UML	Unified Modeling Language
UTC	Coordinated Universal Time