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**Enterprise-Control System Integration –  
Part 4: Objects and attributes for manufacturing  
operations management integration**

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Enterprise-Control System Integration – Part 4: Objects and attributes for manufacturing operations management integration

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## **ENTERPRISE-CONTROL SYSTEM INTEGRATION –**

### **Part 4: Object model attributes for manufacturing operations management integration**

#### **FOREWORD**

This is Part 4 of a series of standards that defines the interfaces between enterprise activities and control activities.

The scope of this Part 4 standard is limited to defining the details of the interface content within manufacturing operations management. The scope of this Part 4 standard is limited to the definition of object models and attributes for the information defined in Part 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 publication has been drafted in accordance with the ISO/IEC Directives, Part 2. Therefore, the first three clauses present the scope of the standard, normative references, and definitions, in that order.

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## INTRODUCTION

This Part 4 standard further defines the object models and attributes involved in data exchange between the categories and activities defined in ANSI/ISA-95.00.03-2005, Enterprise-Control System Integration - Part 3: Activity Models of Manufacturing Operations Management (hereafter referred to as Part 3). The models and terminology defined in Part 3 and Part 4

- 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, the Part 3 and Part 4 standards 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

- a) reduce the user's time to reach full production levels for new products;
- b) enable vendors to supply appropriate tools for implementing integration of manufacturing operations management systems;
- c) enable users to better identify their needs;
- d) reduce the cost of automating manufacturing processes;
- e) optimize supply chains; and
- f) reduce life-cycle engineering efforts.

The Part 3 and Part 4 standards 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

- a) suggest that there is only one way of implementing integration of manufacturing operations management systems;
- b) force users to abandon their current way of handling integration; or
- c) restrict development in the area of integration of manufacturing operations management systems.

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## **ENTERPRISE-CONTROL SYSTEM INTEGRATION –**

### **Part 4: Object and attributes for manufacturing operations management integration**

#### **1 Scope**

This ISA-95 Part 4 standard, in conjunction with ANSI/ISA-95.00.03-2005, Enterprise-Control System Integration—Part 3: Activity Models of Manufacturing Operations Management, specifies interface content between manufacturing operations management categories and activities. The interfaces considered are the interfaces across and within Level 3 categories of the functional hierarchical model defined in the ISA-95 Part 1 standard (see Clause 2 below). The goal is to reduce the risk, cost, and errors associated with implementing these interfaces.

The scope of Part 4 is limited to the definition of object models and attributes exchanged between activities defined in Part 3. Interfaces within Level 2, and Level 3 to Level 2, are out of scope. Interfaces with Level 4 are defined in the ISA-95 Part 2 standard.

#### **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.

ANSI/ISA-95.00.01-2010 (IEC 62264-1 Mod) - Enterprise-Control System Integration - Part 1: Models and Terminology

ANSI/ISA-95.00.02-2010 (IEC 62264-2 Mod) - Enterprise-Control System Integration - Part 2: Object Model Attributes

ANSI/ISA-95.00.03-2005, Enterprise-Control System Integration Part 3: Activity Models of Manufacturing Operations Management

ANSI/ISA-88.00.01-2010, Batch Control – Part 1: Models and Terminology

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

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

ANSI/ISA-18.2-2009, Management of Alarm Systems for the Process Industries

ISO/IEC 19501:2005, Information technology-- Open distributed processing -- Unified modeling language (UML) Version 1.4.2

ISO/IEC 19505-1, Information technology -- OMG Unified modeling language (OMG UML) Version 2.1.2 -- Part 1: Infrastructure

ISO/IEC 19505-2, Information technology -- OMG Unified modeling language (OMG UML) Version 2.1.2 -- Part 2: Superstructure

ISO/CD 22400-1 - Automation systems and integration — Key performance indicators (KPIs) for manufacturing operations management — Part 1: Overview, concepts and terminology

ISO/DIS 22400-2 Automation systems and integration — Key performance indicators (KPIs) for manufacturing operations management — Part 2: Definitions and descriptions