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AMERICAN NATIONAL STANDARD

ANSI/ISA–88.00.03–2003

Batch Control Part 3: General and Site Recipe Models and Representation

Approved 14 March 2003

ISA–The Instrumentation, Systems, and Automation Society

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BATCH CONTROL –

Part 3: General and site recipe models and representation

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ISA Preface

This preface, as well as all footnotes and annexes, is included for information purposes and is not part of ANSI/ISA–88.00.03–2003.

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This document has been structured to follow IEC (International Electrotechnical Commission) guidelines. Therefore,the first three clauses discuss the *Scope* of the standard, *Normative References*, and *Definitions*, in that order.

Clause 4, *Recipe Description*, is informative.

Clause 5 is normative. The intent of this clause is to describe the contents of general and site recipes.

Clause 6 is normative. The intent of the clause is to describe an object model of general and site recipes.

Clause 7 is normative. The intent of this clause is to describe a symbolic language for general and site recipe depiction.

Clause 8 is informative. The intent of this clause is to describe some aspects of general or site to master recipe transformation.

The annexes are informative.

This document is intended for those who are:

a) responsible for defining product processing requirements;

b) involved in designing and/or operating batch manufacturing processes;

c) responsible for specifying controls and the associated application programs for batch manufacturing plants;

d) involved in the design and marketing of products in the area of batch control; or

e) use product information for the purposes of manufacturing or managing the manufacture of product.

ISA Introduction

ANSI/ISA-88.01-1995, Batch Control Part 1: Models and Terminology (referred to as Part 1 throughout this document) provides models and terminology applicable to batch control. ANSI/ISA88.00.02-2001, Batch Control Part 2: Data Structures and Guidelines for Languages (referred to as Part 2 throughout this document) addresses data structures and guidelines for languages. This Part 3 defines additional information on general and site recipes. Clause 4 of this document contains definitions of general and site recipes in greater detail than in Part 1. Clause 5 defines detailed description of the contents of general and site recipes. Clause 6 defines a data model that identifies objects and relationships that were addressed in Clauses 4 and 5. Clause 7 defines a method for depiction of general and site recipes that can be used for both simple and complex processing requirements, using both a tabular and a graphical notation. Clause 8 describes some aspects of general or site to master recipe transformation. The annexes provide complementary information.

Although this document is intended primarily for batch processes, it may have considerable value for other types of processes as well.

BATCH CONTROL –

Part 3: General and site recipe models and representation

1 Scope

This PAS on Batch Control defines a model for general and site recipes; the activities that describe the use of general and site recipes within a company and across companies; a representation of general and site recipes; and a data model of general and site recipes.

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-88.01-1995, *Batch Control Part 1: Models and Terminology* (referred to in this PAS as "Part 1").

ANSI/ISA-88.00.02-2001, *Batch Control Part 2: Data Structures and Guidelines for Languages* (referred to in this PAS as "Part 2").

IEC 61512-1:1997, *Batch Control — Part 1: Models and Terminology*.

IEC 61512-2: 2001, *Batch Control — Part 2: Data Structures and Guidelines for Languages*.

ANSI/ISA-95.00.01-2000, *Enterprise-Control System Integration Part 1: Models and Terminology.*

ANSI/ISA-95.00.02-2001, *Enterprise-Control System Integration Part 2: Object Model Attributes.*

IEC 60050-351:1998, *International Electrotechnical Vocabulary — Part 351: Automatic Control.*

ISO/IEC 19501:2004, *Information Technology — Open Distributed Processing — Unified Modeling Language (UML) Version 1.4.2*

3 Definitions

For the purposes of this PAS, the following definitions apply. Definitions and concepts expressed in the Part 1 and Part 2 standards (IEC 61512-1 and 61512-2 respectively) apply, except where differences are explicitly stated in this PAS. Definitions in IEC 60050-351:1998 were also used as a basis.

3.1 equipment-independent recipe:
a super class of a recipe type that is independent of equipment and follows the procedural model of general recipes.

3.2 master recipe transform component:
part of a master recipe that is used in the transformation of an equipment-independent recipe into a complete master recipe.

3.3 process procedure chart (PPC):
a method for the graphical representation of equipment-independent recipes.

3.4 product family:
a set of produced materials that are related by manufacturing business policy.

3.5 product grades:
a collection of similar materials with some variations in properties.