ISA-TR-88.95.01

Using ISA-88 and ISA-95 Together

Approved 1 August 2008

ISA-TR-88.95.01, Using ISA-88 and ISA-95 Together
ISBN: 978-1-934394-78-6

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Preface

At the time of publication of this document, the editions of the standards referenced within this document were valid. All standards are subject to revision, and parties to agreements based on this document are encouraged to investigate the possibility of applying the most recent editions of the standards indicated within this document.

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Introduction

When the ISA-88 and ISA-95 standards are applied together in an application or project, some of the terminologies, models and key definitions in these two sets of standards need to be aligned to assist the users. A harmonization task group with members from the ISA88 and ISA95 committees has generated this technical report to document and map the overlaps, gaps, similarities and differences in these concepts, terms and definitions. This technical report is intended to enable an integration team to use these specifications jointly, in an application or project.

The purpose of the technical report is to

- Explain how ISA-88 and ISA-95 interrelate.
- Identify areas of overlap and gaps between ISA-88 and ISA-95
- Explain to practitioners how to use ISA-88 and ISA-95 together
- Reduce confusion in industry about the two series standards by answering such questions as:
  - Are they both needed?
  - Do they overlap?
  - Which should be used?
  - When is one more appropriate than the other?

Although the technical report does not take into account the recent proposed additions to both the ISA-88 and ISA-95 families of standards, the approach used in this harmonization task can be applied to facilitate the combined use of these two families of standards.

In particular, as the new parts of ISA-88, Part 4, Batch Production Records, and Part 5, Automated Equipment Control Models and Terminologies, and the additional parts of ISA-95, Part 4, Common Object Model and Attributes, and Part 5, Business-to-Manufacturing Transactions, become widely available, there are expected to be other areas of potential overlaps and gaps when these standards are used together.

However, the planned updates to the existing parts of both these standards families are intended to reflect some of the recommendations in this technical report in order to minimize the problematic areas and to facilitate their continued harmonization.

Readers of this technical report are encouraged to help further align these standards by providing comments to the ISA-88 and ISA-95 committees based on actual experience in applying these standards.

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Using ISA-88 and ISA-95 Together

1 Scope

This technical report is targeted for industry stakeholders (individual or teams) intending to use ANSI/ISA-95 for enterprise-to-control system integration and ANSI/ISA-88 for control system integration within a common project.

The specific goal is to help such an individual or team understand the key issues involved in using ISA-88 and ISA-95 together so that they can make appropriate choices. This technical report is the result of an effort to identify key areas of overlap and gaps between ISA-88 and ISA-95. It will not discuss issues that are not pertinent to both of the standards.

2 References

The following documents contain provisions that are referenced in this text. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this technical report are encouraged to investigate the possibility of applying the most recent editions of the reference documents indicated below.

- 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
- ANSI/ISA-95.00.03-2005, Enterprise/Control System Integration Part 3: Activity Models of Manufacturing Operations Management
- ISA-88.00.01-1995 Batch Control Part 1: Models and Terminology
- ANSI/ISA-88.00.02-2001 Batch Control Part 2: Data Structures and Guidelines for Languages
- ANSI/ISA-88.00.03-2003 Batch Control Part 3: General and Site Recipe Models and Representation
- ANSI/ISA-88.00.04-2006 Batch Control Part 4: Batch Production Records

3 Narrative Overview

3.1 Introduction

When the ISA-88 and ISA-95 series of standards are used within the same plant-wide automation system in an enterprise, it is necessary to align the various definitions in both standards in order for industry stakeholders to reap the intended benefits. Clearly implementations of these two series of standards need to work together. If their interaction is not understood, the intended benefits will not be realized and costly integration problems are likely to arise. The automation, operations and manufacturing solutions providers and consumers will have to work closely together in order to minimize and eventually eliminate these integration problems. This technical report is intended to improve these stakeholders' understanding of both standards series as well as their intent.

Although both standards are intended to enable manufacturing operations and control, they are different in coverage and approach. Table 1 provides a high-level comparison.