ANSI MH10.8.17-2017

Item Unique Identification (IUID)
Data Matrix Encoding Guideline

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American National Standard

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Standards Developer:
Material Handling Committees
MH10 Committee, Unit-Loads and Transport-Packages
Subcommittee 8, Coding & Labelling of Unit-Loads

Approved February 14, 2017
American National Standards Institute, Inc.

FOREWORD. This standard represents suggested performance requirements and test procedures for pressure-sensitive labels incorporating linear bar code and two-dimensional (2D) symbols. It was developed by the MH10 Committee for Unit Loads and Transport Packages, Subcommittee 8, Coding and Labelling of Unit Loads. MH10 is promulgated under the Material Handling Committees (MHC) for which MHI is the Secretariat. This standard is intended to provide useful information and guidance for owners, users, designers, purchasers or specifiers of shipping label equipment. It is advisory only and should only be regarded as a simple tool that its intended audience may or may not choose to follow, adopt, modify, or reject. A standard may be part of, but does not constitute a comprehensive effectiveness program that cannot guard against pitfalls in operating, selecting and purchasing such a system, and should not be relied upon as such. Such a program should be developed by a qualified professional.

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At the time of approval, the MH10/SC 8 committee consisted of the following members:

- AIAG (Automotive Industry Action Group), Bill Hoffman
- Boeing Corporation, John Engel
- CDO Technologies, Don Ertel
- DoD Logistics AIT Office, Dan Kimball
- R Fox Enterprise. Bob Fox
- Evanhoe & Associates, Chuck Evanhoe
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- United Parcel Service, Brian Swearingin
- United States DoD Office of the Under Secretary of Defense (AT&L)/DPAP/PDI, Craig MacDougall
- United States Library of Congress, Michele Youket

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1. Objective

This standard has been developed as a guideline to address two related objectives:

a) to provide a conceptual understanding of the various standards and how they interrelate to form requirements of Item Unique Identification (IUID). The specific facet of IUID this guideline focuses on is how to encode data into the proper machine readable symbol (like a barcode) the proper way; and

b) to provide a troubleshooting guide for checking markers and readers of IUID Data Matrix symbols[1].

2. Requirements and Assumptions

2.1. Requirements

Current version of all applicable standards that apply to the United States Department of Defense (DoD) IUID requirement (see section 2.3).

2.2. Assumptions

This document is written under the assumption the user has read and understands all standards applicable to their industry that have been referenced in the DoD IUID requirements.

2.3. Pertinent Documents [2]

The following nine documents are the authoritative sources from which the information within this guide is drawn. These documents are occasionally reviewed and updated. If the current version of any of them is different from what is listed below, the reader should be aware the change could affect the usefulness of this guide. In cases where contracts are relevant and cite specific versions of standards, the cited versions must be followed and may be different from what has been used within this guide.

a) MIL-STD-130N w/CHANGE 1, *Department of Defense Standard Practice Identification Marking of U.S. Military Property*, 16 November 2012

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[1] For the purpose of this document, the term "IUID Data Matrix" is used to describe a Data Matrix symbol compliant with all DoD IUID policies and business rules. This is equivalent to the terms "UII Data Matrix Symbol", "IUID compliant Data Matrix, IUID MRI mark", and "Data Matrix containing the UII data set" used in other IUID documents. A Data Matrix not meeting all DoD IUID policies and business rules is referred to as a "non-compliant Data Matrix". The term "Data Matrix" is used to describe a Data Matrix symbol which may or may not meet all DoD IUID requirements.

[2] Many other documents exist which are crucial to the understanding of IUID as a whole. They have been omitted because they do not pertain to the purpose of this guide. (e.g., information about the IUID Registry does not contribute to the understanding of how to form IUID Data Matrix symbols.)