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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 16022 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

International Standard ISO/IEC 16022 was prepared by AIM International (as ANSI/AIM BC11) and was adopted, under a special “fast-track procedure”, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

Annexes A to P form a normative part of this International Standard. Annexes Q to V are for information only.

Information technology — International symbology specification — Data matrix

Introduction

Data Matrix is a two-dimensional matrix symbology which is made up of square modules arranged within a perimeter finder pattern. Though primarily shown and described in this document as a dark symbol on light background, Data Matrix symbols can also be printed to appear as light on dark.

Manufacturers of bar code equipment and users of the technology require publicly available standard symbology specifications to which they can refer when developing equipment and application standards. The publication of Symbology Specifications is designed to achieve this.

1 Scope

This specification defines the requirements for the symbology known as Data Matrix. It specifies the Data Matrix symbology characteristics, data character encodation, symbol formats, dimensions and print quality requirements, error correction rules, decoding algorithm, and user-selectable application parameters.

2 Normative References

This specification incorporates provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed below. The latest edition of the publication referred to applies.

EN796 Bar Coding : Symbology Identifiers

EN1556 Bar Coding : Terminology

ANSI X3.182 Bar Code Print Quality - Guideline (Same as EN1635 - Bar Coding : Test Specifications for Bar Code Symbols)

ANSI X3.4 Coded Character Sets - 7-bit American National Standard Code for Information Interchange (7-bit ASCII) (equivalent to the US national version of ISO 646)

ISO/IEC 8859-1 Information Processing - 8-bit Single-byte Coded Graphic Character Sets - Part 1 (Latin Alphabet Number 1)

ECI Assignments Document- AIM International

3 Definitions and Mathematical Symbols

3.1 Definitions

For the purposes of this specification, the following definitions in EN 1556 shall apply:

algorithm, application standard, ASCII, autodiscrimination, binary, bit, CCD, code page, code set, data character, data codeword, data region, data separator character, decode algorithm, decoder, error correction, finder pattern, human readable character, latch character, leading zeros, matrix symbology, modulo, numeric, omnidirectional, orientation pattern, overhead, pad character, pixel, quiet zone, reference decode algorithm, Reed-Solomon error correction, scanner, shift characters, structured append, symbol character, symbology, symbology identifier, X-dimension

The following definitions also apply to this specification. Although some of the terms below are defined in EN1556, the definitions which follow below are more appropriate for this specification.

3.1.1 Alignment Pattern

A unique pattern in larger ECC 200 Data Matrix symbols, made up of a solid line of contiguous dark cells abutting a line of alternating dark and light cells. The alignment patterns run horizontally and vertically within the symbols.

3.1.2 Codeword

A symbol character value. An intermediate level of coding between source data and the graphical encodation in the symbol.