Australian Standard®

DATA PROCESSING—VOCABULARY

Part 2—ARITHMETIC AND LOGIC OPERATIONS

This Australian standard was prepared under the direction of Committee MS/20, Computers and Information Processing. It was approved by the Council of the Standards Association of Australia on 18 May 1982 and published on 12 July 1982.

The following interests were represented on the committee responsible for the preparation of this standard:

Australian Banks Payment Systems Committee
Australian Bureau of Statistics
Australian Computer Equipment Suppliers Association
Australian Computer Services Association
Australian Computer Users Association
Australian Public Service Board
CSIRO, Division of Computing Research
Department of Defence
Life Insurance Federation of Australia
Manufacturers of data processing equipment
National Library of Australia
Office Equipment Industry Association of Australia
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PREFACE

This standard was prepared under the authority of the Association's Committee on Computers and Information Processing. It is one part of a series superseding AS 1189—1972, and is identical with and has been reproduced from the corresponding part of International Standard ISO 2382, drawn up by ISO/TC 97, Computers and Information Processing.

The 1972 edition of the standard was based on the American National Standard ANSI X3.12—1970 pending the publication of the ISO vocabulary as ISO 2382. The committee has decided that sufficient parts of the ISO vocabulary have been published to warrant the revision of AS 1189.

The complete standard comprises the following parts:

Part 0: Consolidated Index
Part 1: Fundamental Terms
Part 2: Arithmetic and logic operations
Part 3: Equipment technology
Part 4: Organization of data
Part 5: Representation of data
Part 6: Preparation and handling of data
Part 7: Digital computer programming
Part 8: Control, integrity and security*
Part 9: Data communication*
Part 10: Operating techniques and facilities
Part 11: Control, input-output and arithmetic equipment
Part 12: Data media, storage and related equipment
Part 13: Computer graphics and computer micrographics
Part 14: Reliability, maintenance and availability
Part 15: Programming languages*
Part 16: Information theory
Part 17: Data base management*
Part 18: Remote access data and data processing system*
Part 19: Analog computing*
Part 20: System development*
Part 21: Interfaces*
Part 24: Numerical control of machines

In addition to the alphabetical index in this part, Part 0 provides a consolidated alphabetical index to the terms defined in Parts 1 to 7, 10 to 12, 14, 16, 19 and 24.

As this standard consists of several parts prepared over a long period there could be some inconsistencies introduced in the later parts when compared with the earlier ones. These inconsistencies will be eliminated as far as possible in later editions. This procedure allows for immediate publication of needed parts and permits an element of flexibility in the preparation of a comprehensive vocabulary in view of the dynamics of language.

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* In course of preparation.

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STANDARDS ASSOCIATION OF AUSTRALIA

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PART 2—ARITHMETIC AND LOGIC OPERATIONS

FOREWORD

Data processing gives rise to numerous international exchanges of both intellectual and material nature. These exchanges often become difficult, either because of the great variety of terms used in various fields or languages to express the same concept, or because of the absence of or the imprecision of useful concepts.

To avoid misunderstandings due to this situation and to facilitate such exchanges it is advisable to select terms to be used in various languages or in various countries to express the same concept and to establish definitions providing satisfactory equivalents for the various terms in different languages.

In accordance with the directions given to the ISO subcommittee in charge of the Vocabulary, the work on it has been mainly based on the usage to be found in the Vocabulary of information processing* established and published by the International Federation for Information Processing and the International Computation Centre, and in the U.S.A. Standard vocabulary for information processing established, published and revised by the American National Standards Institute. (AS 1189—1972 was based on this revised edition.) The subcommittee also considered various international documents or drafts issued by ISO Technical Committee 97 and its subcommittees and other international organizations (such as the International Telecommunication Union) and national drafts or standards.

The definitions have been drawn up with the objective of achieving a proper balance between precision and simplicity. The main objective of this Vocabulary is to provide definitions that can be understood to have the same meaning by all concerned. It may thus be felt that some definitions are not sufficiently precise, do not include all cases, do not take into account certain exceptions, or are in conflict with established uses in particular fields of application.

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* North Holland Publishing Company—AMSTERDAM 1966.

1 GENERAL

1.1 Introduction

This part of the Vocabulary deals with concepts often used in data processing that are related to mathematics and logic. Concepts concerning numerical quantities are dealt with in the light of the computing methods that may be used with them. This part deals with general terms concerning the arithmetic operations and logic operations. Tables of dyadic and monadic Boolean operations are attached to this part (annexes A and B); the tables contain symbolic representations of these operations but their purpose is neither to standardize the symbols of Boolean operations nor to set a precedent. Definitions of a number of additional terms, relating to pure mathematics, are given in annex C.

1.2 Scope

The Vocabulary is intended to facilitate international communication in data processing. It presents, in two languages, terms and definitions of selected concepts relevant to the field of data processing and identifies relationships between the entries.

In order to facilitate their translation into other languages, the definitions are drafted so as to avoid, as far as possible, any peculiarity attached to a language.

1.3 Field of application

The Vocabulary deals with the main areas of data processing, including the principal processes and types of equipment used, the representation, organization and presentation of data, the programming and operation of computers, input/output devices and peripheral equipment, as well as particular applications.

2 PRINCIPLES AND RULES FOLLOWED

The sub-clauses under this heading included in AS 11[illegible] Part 1 are equally applicable to this part. The[illegible]re not reproduced here. The corresponding sub-clau[illegible]adings are the following:

2.1 Definition of an entry

2.2 Organization of an entry

2.3 Classification of entri[illegible]

2.4 Selection of t[illegible]ms [illegible]nd wording of definitions

2.5 Multiple meani[illegible]gs

2.6 Ab[illegible]revia[illegible]ons

2.[illegible] Use of parentheses

2.8 Use of (square) brackets

2.9 Use of terms printed in italic typeface in definitions and use of asterisks

2.10 Spelling

2.11 Organization of the alphabetical index