Australian Standard®

Programming Language FORTRAN

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PREFACE

This edition of this standard was prepared under the authority of the Association's Committee on Information Processing Systems to supersede AS 1486—1973. It is identical with International Standard 1539—1979 which in turn is identical with American National Standard ANSI X3.9—1978. The text of the latter has been used throughout in this standard and is reproduced with permission from American National Standard X3.9—1978, American National Standard Programming Language FORTRAN, copyright 1978 by the American National Standards Institute. Copies of ANSI X3.9 may be purchased from the American National Standards Institute at 1430 Broadway, New York, NY 10018.

Australian Standard Programming Language FORTRAN specifies the form and establishes the interpretation of programs expressed in the FORTRAN language. It consists of a full language and a subset language. Its purpose is to promote portability of FORTRAN programs for use on a variety of data processing systems.

It is suggested that the designation FORTRAN 77 be used to distinguish this standard from previous FORTRAN standards and any possible future revisions.

FORTRAN 77 is a revision of AS 1486—1973, which was based on ISO/R 1539—1972 and ANSI X3.9—1966. It describes two levels of the FORTRAN language, referred to as FORTRAN and subset FORTRAN. FORTRAN is the full language and appears on the righthand pages; Subset FORTRAN is a subset of the full language and appears on the lefthand pages. Because FORTRAN includes the subset, AS 1486—1973 is accordingly superseded by this standard.

Appendix A gives some background to the development of this standard and its relationship to the previous standard. References to 'ANSI X3.9—1966' in Appendix A should be taken to mean 'AS 1486—1973'.

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1. INTRODUCTION

1.1 Purpose

This standard specifies the form and establishes the interpretation of programs expressed in the FORTRAN language. The purpose of this standard is to promote portability of FORTRAN programs for use on a variety of data processing systems.

1.2 Processor

The combination of a data processing system and the mechanism by which programs are transformed for use on that data processing system is called a processor in this standard.

1.3 Scope

1.3.1 Inclusions. This standard specifies:

(1) The form of a program written in the FORTRAN language

(2) Rules for interpreting the meaning of such a program and its data

(3) The form of writing input data to be processed by such a program operating on data processing systems

(4) The form of the output data resulting from the use of such a program on data processing systems

1.3.2 Exclusions. This standard does not specify:

(1) The mechanism by which programs are transformed for use on a data processing system

(2) The method of transcription of programs or their input or output data to or from a data processing medium

(3) The operators required for setup and control of the use of programs on data processing systems

(4) The results when the rules of this standard fail to establish an interpretation

(5) The size or complexity of a program and its data that will exceed the capacity of any specific data processing system or the capability of a particular processor

(6) The range or precision of numeric quantities and the method of rounding of numeric results