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## Information technology — Programming languages — Fortran —

### Part 2: Varying length character strings

*Technologies de l'information — Langages de programmation — Fortran —  
Partie 2: Chaînes de caractères de longueur variable*

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## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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 part of ISO/IEC 1539 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 1539-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 22, *Programming languages, their environments and system software interfaces*.

This second edition cancels and replaces the first edition (ISO/IEC 1539-2:1994), which has been technically revised. The following summarises the changes made to the facilities provided by this part of ISO/IEC 1539:

The assignment, concatenation, and comparison operations are extended to describe elemental semantics.

CHAR is extended to describe pure semantics.

ADJUSTL, ADJUSTR, EXTRACT, IACHAR, ICHAR, INDEX, INSERT, LEN, LEN\_TRIM, LGE, LGT, LLE, LLT, REMOVE, REPEAT, REPLACE, SCAN, SPLIT, TRIM, VAR\_STR, and VERIFY are all extended to describe elemental semantics.

ISO/IEC 1539 consists of the following parts, under the general title *Information technology — Programming languages — Fortran*:

- *Part 1: Base language*
- *Part 2: Varying length character strings*

Annexes A and B of this part of ISO/IEC 1539 are for information only.

## Introduction

This part of ISO/IEC 1539 has been prepared by ISO/IEC JTC1/SC22/WG5, the technical working group for the Fortran language. This part of ISO/IEC 1539 is an auxiliary standard to ISO/IEC 1539-1 : 1997, which defines the latest revision of the Fortran language, and is the first part of the multipart Fortran family of standards; this part of ISO/IEC 1539 is the second part. The revised language defined by ISO/IEC 1539-1 : 1997 is informally known as Fortran 95.

This part of ISO/IEC 1539 defines the interface and semantics for a module that provides facilities for the manipulation of character strings of arbitrary and dynamically variable length. Annex A refers to a possible implementation, in Fortran 95, of a module that conforms to this part of ISO/IEC 1539. It should be noted, however, that this is purely for purposes of demonstrating the feasibility and portability of this standard. The actual code is not intended in any way to prescribe the method of implementation, nor is there any implication that this is in any way an optimal portable implementation. The module is merely a fairly straightforward demonstration that a portable implementation is possible.

This standard is a development from a previous version known as ISO/IEC 1539-2: 1994 that takes account of the improvements introduced in Fortran 95. The most significant improvements in Fortran 95 for the present standard were the introduction of pure and elemental procedures. Since pure and elemental functions can be used in specification expressions, their introduction in this standard enhances the usability of the standard for the end user. The ability to define many of the functions specified in this standard to be elemental improves the compatibility of these functions with similar intrinsic functions defined by the main standard.

The improvements in type initialization provided in Fortran 95 have also enabled the sample implementation referred to in Annex A to be written in such a way that significant leakage of memory is less likely to occur.