Fortran Committees

Fortran development is divided between two committees.

A working group of a subcommittee of a joint ISO/IEC technical committee, officially designated ISO/IEC JTC1/SC22/WG5, is responsible for setting the requirements for Fortran, monitoring progress toward implementing those requirements in a revision of the standard, and maintaining the current standard (publishing corrigenda).

WG5 has appointed ANSI to perform the development work. ANSI has in turn contracted with a subcommittee of the International Committee for Information Technology Standards, officially designated ANSI/INCITS/J3, to carry out the development work.

(The former contractor was the Computer and Business Equipment Manufacturers Association; the previous committee’s designation was ANSI/CBEMA/X3J3.)
Extensions of Fortran 95 that are already standardized:


- Generalization of the ALLOCATABLE attribute to allow allocatable components, dummy arguments and function results. This is ISO/IEC Technical report 15581. See ftp://ftp.nag.co.uk/sc22wg5/N1351-N1400/N1379.ps.gz.
What's Coming in Fortran 2000

The requirements for the next Fortran standard are set by ISO/IEC JTC1/SC22/WG5. Development work is done by the ANSI/NCITS/J3 committee. WG5 has set nine required elements of development, 16 minor technical enhancements, and seven low-priority minor technical enhancements. Using ISO nomenclature, the requirements are:

R1 User-defined derived-type input/output.

R2 Asynchronous input/output.

R3 Procedure pointers.

R4 Interval arithmetic enabling technologies:
   b Additions to character set
   f Constants for opaque types

R5 Parameterizing derived types with integers (not types – too bad).

WVS 23 April 2002 – Page 3 of 10
What’s Coming in Fortran 2000

R6  Object oriented technologies:
    a  Inheritance and type-bound procedures
    b  Polymorphism
    c  Unlimited root type
    d  WITH-like construct

R7  Generalized constructors and destructors

R8  Internationalization

R9  Interoperability with C
What's Coming in Fortran 2000

The minor technical enhancements are:

M1 Increased statement length (to 99 lines).

M2 Allow INTENT specification for pointer dummy arguments.

M3 Generic RATE_COUNT in SYSTEM_CLOCK.

M4 Allow specifying pointer bounds.

M5 Extend MAX and MIN intrinsics to CHARACTER type.

M6 Extended initialization expressions (allows more intrinsics).

M15 Allow renaming defined operators in USE statements.

M16 Derived type assignment fix (has become an interpretation request).

M17 Enhanced complex constants.
What's Coming in Fortran 2000

M26 Dynamic type allocation.

M27 Access to standard input/output unit numbers.

M28 IMPORT statement in interface bodies.
What’s Coming in Fortran 2000

The low-priority minor technical enhancements are:

B1 The `VOLATILE` attribute (Was M19).

B2 Allow public entities of private type.

B3 Mixed `PUBLIC` and `PRIVATE` accessibility for derived type components.

B4 Stream input/output.

B5 Command line arguments and environment variables (was M18).

B6 Access to status error messages.

B7 Control of rounding during input/output.

?? `PROTECTED` attribute for module variables.
What’s Coming in Fortran 2000

The draft standard for Fortran 2000 is known as “standing document 007”. It can be accessed from the J3 web page:

http://www.j3-fortran.org

It is not a private document. Anybody can access it. There will be an official public comment period, but informal comments are welcome. At this time in the development cycle, it is not possible to add new work items, delete existing ones, or make major changes in technical approaches. It would, however, be worthwhile to receive comments about poor exposition, inconsistencies, or unworkable or clumsy details of the technical approach.
ISO/IEC JTC1/SC22 have approved a work item called a "Type-2 Technical report" to enhance module facilities in Fortran.

The goal of the report is to allow (but not require) modules to be developed that have the interface in one program unit, and the body divided among several other program units.

This facility was present in the Ada language from its inception in 1983, and has proven to be quite valuable for the development of large programs, especially programs developed and maintained by large teams.
After Fortran 2000

The intention is to publish this technical report at the same time as the revised standard is published. Type-2 technical reports have the stature of a standard. Part of the agreement in their production is that they will be incorporated into the next standard in a form as close as possible to the technical report. The only acceptable reason for difference between the technical report and the revised standard is difficulty in implementing the provisions of the technical report.

There are no intentions to change Fortran’s status to “maintenance,” as the ISO C committee has chosen to do. Members of WG5 and J3 are already developing “wish lists” for the next revision of the standard. It is anticipated that the next revision will be a smaller increment than the step from Fortran 95 to Fortran 2000.