

US National Activity Report

WG5 meeting, July 1996

Since the last WG5 meeting (November 1995), the US Fortran standards committee, X3J3, has met three times - November 1995, February 1996, and May 1996. During these meetings the input for Corrigenda 3 and the Fortran 95 DIS were completed as per WG5 requests.

Fortran 2000 requirements and priorities. The US recommends that the Fortran 2000 requirements and their priorities be as described in document X3J3/96-115r2. These requirements and priorities are reproduced here. Note that 16 items in this list are new US recommendations, identified since the last WG5 meeting; note also that three items in WG5-N1155 (B10, B20, B23) are not included in this list (see below).

<u>Requirement title</u>	<u>WG5 repository number</u>
----- highest priority -----	
derived type i/o	17 (N1155/B2)
condition handling	05 (N1155/B3)
asynchronous i/o	52 (N1155/B5)
pointers to procedures	43 (N1155/B4)
object oriented Fortran	18 (N1155/B8)
support for interval arithmetic	62 (new US recommendation)
----- medium priority -----	
command line arguments	20 (N1155/B6)
bit data type	21 (N1155/B15)
compiler directives	19 (N1155/B21)
varying character data type	34 (N1155/B16)
packaging vendor intrinsics in modules	46 (N1155/B24)
stream i/o	63 (new US recommendation)
extend ALLOCATE to non-kind parameters	72 (new US recommendation)
----- lowest priority -----	
posix binding to Fortran 95	47 (N1155/B13)
nesting of internal procedures	33 (N1155/B14)
unsigned integer data type	37 (N1155/B17)
array components of arrays of structures	58 (new US recommendation)
restricting pointer access	60 (new US recommendation)
change conformance rules	70 (new US recommendation)
nonadvancing list-directed i/o	65 (new US recommendation)
any kind integers in i/o specifiers	68 (new US recommendation)

----- minor technical enhancements -----	(N1155/B1)
increased statement length	50 (N1155/B9)
intent for pointer arguments	44,44a (N1155/B12,B22)
specifying pointer lower bounds	02
specifying default precision	49 (N1155/B7)
processor-dependent features list	51 (N1155/B11)
more than 7 array dimensions	24 (N1155/B18)
renaming defined operators	41 (N1155/B19)
generic rate_count in system_clock	61 (new US recommendation)
extend max/min intrinsics to character	64 (new US recommendation)
enhanced complex constants	66 (new US recommendation)
lower-case syntax elements	67 (new US recommendation)
liberalize use of BOZ constants	69 (new US recommendation)
allow MERGE in constant expressions	71 (new US recommendation)
named scratch files	73 (new US recommendation)
passing specific/generic names	59 (new US recommendation)

The highest priority items should be firm requirements for Fortran 2000. Medium and low priority items may "miss the train" if the schedule does not permit their completion after integration of the technical reports and the highest priority items into the draft standard document. The US proposes that the "minor technical enhancements" category contain small "stand-alone" items that X3J3 may do, not do, add to, etc., according to the availability of resources.

The US recommends that WG5 withdraw three items from its preliminary list of Fortran 2000 requirements (WG5-N1155). These three items are:

<u>WG5 number</u>	<u>Requirement title</u>	<u>Reason</u>
42 (N1155/B23)	internal procedures as actual arguments	cost high, need low
48 (N1155/B20)	variable format specifiers	specs contentious, need low
53 (N1155/B10)	private/shared data in parallel processes	cost very high, need not clear

Finally, the US recommends that none of the Fortran 95 obsolescent features be deleted in Fortran 2000.

Liaison reports, US recommendations. Since the last WG5 meeting X3J3 has at each of its meetings reviewed the status of each of the three technical reports (TRs), the proposed TR on parameterized derived types (PDT), and the project on conditional compilation; a liaison report documenting each such review has been approved, sent to the corresponding project editor, and copied to WG5.

At this point the US believes that the floating point exception handling TR is time critical, essentially complete, and has adequate consensus; therefore the US supports moving this TR to the CD stage.

The allocatable components TR, while not time critical, is also essentially complete, with adequate consensus except for the provisions for automatic reallocation; the US supports moving this TR to the CD stage if the suggested modifications are made regarding automatic reallocation.

The C interoperability TR, while time critical, appears not to be as far along and does not have adequate consensus on its technical content; accordingly the US does not support moving this TR to the next stage of ISO processing.

The proposed parameterized derived type TR is essentially complete, but there is not yet adequate consensus on its technical contents. Because of this, and the belief that they are not time critical and interact with many other parts of the language, the US does not support making parameterized derived types into a TR.

The US supports continuing with the separate conditional compilation part of the Fortran standard, but does not have a strong preference at this time as to which alternative approach is chosen.

Fortran 77. At its May 1996 meeting X3J3 voted unanimously, without discussion, to reaffirm its earlier recommendation that the ANSI Fortran 77 standard be withdrawn and to approve responses to the comments associated with the public review that occurred over a year ago.