

Disposition of Comments on Approval Ballot for PDTR 15580

1. Introduction

Some minor changes have been made to the draft in response to the ballot and some significant changes have been made in response to a private communication from Malcolm Cohen of Nag, Oxford, UK. All changes have been approved by WG5.

2. Ballot comments

1. The comment accompanying the affirmative vote from the United Kingdom was: "The title should be changed to 'Floating Point Exception Handling in Fortran'".

Response: This change has been made.

2. DIN comments on JTC 1/SC22 N2319 (PDTR Floating Point Exception Handling)

Page 1:

The document does not commence with a statement along the lines of WG5/N1152, section 3. This should be added.

Response: This has been added as a paragraph in the Foreword.

Page 9:

Check/update edits to refer to WG5/N1191 or X3J3/96-007r1.

Response: Checks were made, but no changes needed.

3. Malcolm Cohen's comments:

Problem A: (Major)

There seems to be a confusing duplication of functionality plus missing functionality as follows:

Missing functionality:

(4) no IEEE_REM

Response: IEEE_REM has been added as an extra function.

Problem B: (Minor)

(a) The semantics of IEEE_SUPPORT_SQRT are buried in 15.7 "IEEE arithmetic". I was lucky to spot them at all. 15.9.28 just says "supports" (without mentioning the SQRT intrinsic), and 15.7 says that it means that the SQRT intrinsic returns -0.0 for SQRT(-0.0).

(b) Is the only requirement on SQRT for IEEE_SUPPORT_SQRT to return .TRUE. the return value for negative zero? What about the accuracy requirement in the IEEE standard? You could just say that SQRT must return the value specified by IEEE for the square root operation and give the SQRT(-0.0) value as an example.

Response: The wording of 15.7 has been changed and slight changes have been made to and the detailed description of IEEE_SUPPORT_SQRT.

Problem C: (Minor)

IEEE_IS_FINITE, IEEE_IS_NAN, IEEE_IS_NEGATIVE, IEEE_IS_NORMAL are all described as "Elemental function" but in each case the Result Characteristics are "Default logical scalar". It should just be "Default logical".

Response: The suggested changes have been made.

Problem D: (More of an editorial quibble than a problem...)

The document does not appear to follow the ISO/IEC guidelines - missing the mandatory sections "Forward" and "Scope", no "Normative references" section to list the F95 and IEEE 754 standards, "Rationale" section instead of an "Introduction" section.

Response: The suggested changes have been made.