

Proposal for C23
WG14 N2748

Title: Effects of fenv exception functions
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Proposal category: Editorial
Reference: N2596

In the current C23 draft (N2596), footnotes in the descriptions for **feraiseexcept** and **fesetexcept** refer to floating-point traps. Floating-point traps were optional features in the initial version of IEC 60559 and are still supported in some floating-point hardware, but traps are not specified in more recent versions of IEC 60559. And the footnotes do not mention alternate exception handling which is specified in current IEC 60559. Since neither floating-point traps nor IEC 60559 alternate exception handling are supported in standard C, they can be regarded as implementation extensions. The following suggested changes are intended to clarify the nature of such extensions.

Suggested changes:

Suggested change in footnote to 7.6.4.3 #2 (**feraiseexcept**):

232)The effect is intended to be similar to that of floating-point exceptions raised by arithmetic operations. Hence, ~~enabled traps for floating-point exceptions raised by this function are taken~~ implementation extensions associated with raising a floating-point exception (for example, enabled traps or IEC 60559 alternate exception handling) should be honored. The specification in F.8.6 is in the same spirit.

Suggested change in footnote to 7.6.4.4 #2 (**fesetexcept**):

233)~~Enabled~~ Implementation extensions like traps for floating-point exceptions and IEC 60559 exception handling ~~are not taken~~ do not occur.

Suggested change in 7.6.4.5 #2 (**fesetexceptflag**):

~~T~~Like **fesetexcept**, this function does not raise floating-point exceptions, but only sets the state of the flags.