

Replacement Suggested Technical Corrigendum for DR 501

WG 14 N2108

2017-02-02

C FP Group

Reference Document: C11, DR 501

Subject: DECIMAL_DIG

Summary

C11 5.2.4.2.2 defines the **DECIMAL_DIG** macro in terms of the “widest supported floating type”. Since the widest floating type is **long double**, the **LDBL_DECIMAL_DIG** macro, which is defined the same way as **DECIMAL_DIG** except in terms of the **long double** type, is equivalent to **DECIMAL_DIG**.

As the wording “widest supported floating type” might suggest, **DECIMAL_DIG** was intended to apply to all floating-point types, including extensions to the standard (such as the types in TS 18661-3). This was misguided: such types are not “floating types” as defined in the C11 standard; there seems to be no way for an implementation that supports a floating-point type wider than **long double** to define **DECIMAL_DIG** so that it applies to the wider type and also is conformant to C11. If a floating-point type wider than **long double** is supported (as an extension to C11), then a **DECIMAL_DIG**-like macro specific to the widest such type, would serve the intended role of **DECIMAL_DIG**.

This might appear to be a conformance technicality, but having **DECIMAL_DIG** reflect the widest supported floating-point type, as envisioned, might be problematic for users and implementers. An implementation that added an extension floating-point type and changed **DECIMAL_DIG** to match might break backward-compatibility.

The following suggested Technical Corrigendum obsolesces the **DECIMAL_DIG** macro. It supersedes the suggested Technical Corrigendum in DR 501.

Suggested Technical Corrigendum

In 7.31, add a subclause:

7.31.x Mathematics <math.h>

Use of the **DECIMAL_DIG** macro is an obsolescent feature. A similar type-specific macro, such as **LDBL_DECIMAL_DIG** can be used instead.

In 5.2.4.2.2, in the bullet defining **DECIMAL_DIG**, attach a footnote to the wording:

DECIMAL_DIG

where the footnote is:

*) See “future library directions” (7.31.x).