

**Proposal for C2x
WG14 N2120**

Title: TS 18661-5 evaluation format pragmas
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Date: 2017-03-05
Proposal category: New features
Target audience: Floating-point precision-performance balancing, reproducible results

Abstract: This proposal incorporates pragmas for evaluation formats into C2x, as prescribed in ISO/IEC TS 18661-5. These pragmas, one for binary and one for decimal, provide the preferredWidth attributes recommended by the current IEC 60559 floating-point standard (2011). The program can use the pragmas to specify a supported evaluation method for a specific block of code, in order to gain extra precision or performance as needed. The evaluation methods are as described for the FLT_EVAL_METHOD and DEC_EVAL_METHOD macros in <float.h>. The proposed specification requires implementations (that support the feature) to provide a common evaluation method (for each supported radix). The pragmas have the same form and scope as the standard floating-point pragmas in current C. Other proposals cover the other features in TS 18661-5.

Prior art: Controls (in the form of compile-line options or compiler directives) for evaluating floating-point expressions are commonplace, though implementation specific.