

P1 CR for totalorder parameters

WG 14 N2292

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C FP Group

TS 18661-1 CR nn

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Reference Document: TS 18661-1

Subject: totalorder parameters

Summary

The IEC 60559 `totalOrder` operation provides a total ordering of the canonical members of the format, including signaling NaNs. Therefore the binding C function `totalorder`, specified in TS 18661-1, must be able to accept signaling NaN inputs. Currently the parameters for `totalorder` have floating type, whose argument passing may convert a signaling NaN argument into a quiet NaN parameter value. The following suggested changes use pointers to preserve signaling NaN inputs.

Suggested Technical Corrigendum

In F.10.12.1 (TS 18661-1), change:

```
int totalorder(double x, double y);
```

to:

```
int totalorder(double * x, double * y);
```

and similarly for the other prototypes in F.10.12.1 and F.10.12.2.

In F.10.12.1 (TS 18661-1), change:

Description

[2] The `totalorder` functions determine whether the total order relationship, defined by IEC 60559, is true for the ordered pair of its arguments `x`, `y`. These functions are fully specified in IEC 60559. These functions are independent of the current rounding direction mode and raise no floating-point exceptions, even if an argument is a signaling NaN.

Returns

[3] The `totalorder` functions return nonzero if and only if the total order relation is true for the ordered pair of its arguments `x`, `y`.

to:

Description

[2] The **totalorder** functions determine whether the total order relationship, defined by IEC 60559, is true for the ordered pair ***x**, ***y**. These functions are fully specified in IEC 60559. These functions are independent of the current rounding direction mode and raise no floating-point exceptions, even if ***x** or ***y** is a signalling NaN.

Returns

[3] The **totalorder** functions return nonzero if and only if the total order relation is true for the ordered pair ***x**, ***y**.

and similarly for F.10.12.2.