

Subject: Comments on Section 14  
 From: Van Snyder

## 1 Edits

Edits refer to 01-007r3. Page and line numbers are displayed in the margin. Absent other instructions, a page and line number or line number range implies all of the indicated text is to be replaced by immediately following text, while a page and line number followed by + (-) indicates that immediately following text is to be inserted after (before) the indicated line. Remarks are noted in the margin, or appear between [ and ] in the text.

[Editor: “and” ⇒ “;”.]	333:6
[Editor: “When” ⇒ “If”. Insert “in a scoping unit” after “accessible”.]	333:8
[Editor: Delete “IEEE_SUPPORT_DIVIDE,” because it doesn’t belong in this paragraph – or indeed in this subclause.]	337:24
[Editor: “can ... inquire” ⇒ “are provided to determine”; “this facility is” ⇒ “these facilities are”.]	337:25
[ISO doesn’t like the term “section”. Re-write to be like subclause 13.5.]	338:7-8
For all of the procedures defined in the modules, the arguments shown are the names that shall be used for argument keywords when using the keyword form for actual arguments.	
[The term “inquiry function” isn’t defined for this section.]	
The procedure classification terms “inquiry function” and “transformational function” are used here with the same meanings as in 13.1.	
[Editor: would look better if laid out like 13.5.1-17. The editor is encouraged to try it.]	14.8.1-5
[Editor: Insert “the” before “processor” twice.]	338:22,25
[Editor: Insert “the” before “processor” twice.]	338:27,30
[Editor: “Whether” ⇒ “Determine if” for consistency with other summaries.]	338:39
[Editor: Delete the extra blank after “environment”.]	339:24
[ISO doesn’t like the term “section”. Editor: “In ... The” ⇒ “In the detailed descriptions below,”.]	339:33
[Editor: Delete “ever” because it’s not needed.]	340:10
[Editor: “and” ⇒ “or”.]	341:21
[Editor: Insert “value” after “result”.]	342:8
[Editor: “can” ⇒ “value can validly”.]	342:24
[Editor: “Whether” ⇒ “Determine if” twice for consistency with summaries.]	342:26,38
[Editor: “and” ⇒ “or”.]	342:34
[Editor: “Whether” ⇒ “Determine if” twice for consistency with summaries.]	343:6,17
[Editor: “and” ⇒ “or” twice.]	343:13,25
[Editor: Delete second “Result value.”]	343:36

[Hyperbolic. Editor: “without ... being” $\Rightarrow$ “and no exception is”.]	344:9
[Nearest to what? Editor: “nearest ... X” $\Rightarrow$ “representable number having a magnitude nearest to $ 2^I $ and the same sign as X”.]	345:14-15
[Editor: Indent the description. OK in $\LaTeX$ .]	346:12
[Editor: Single space the paragraph. OK in $\LaTeX$ .]	346:23-24
[My dictionary has “declare earnestly” as the first definition of “assure” and “to make certain that a future event occurs” as the third one. “Ensure” has the desired meaning listed first. Editor: “assure” $\Rightarrow$ “ensure”.]	347:15
<b>Argument.</b> X (optional) shall be of type real. May be scalar or array valued.	
[Editor: Move “IEEE... true” to be after “denormal”. Capitalize “if”. Insert a comma after “denormal”.]	347:26-28
[Run-on sentence. Editor: “and all” $\Rightarrow$ “; they”.]	348:4
[Editor: “Here, support” $\Rightarrow$ “Support”.]	349:3
[Simplification: “rounding ... reals” $\Rightarrow$ “IEEE rounding mode”.]	350:4-5
[Editor: “Here, support” $\Rightarrow$ “Support”.]	350:15
[Editor: Delete second “of”.]	351:29

## 2 “Restriction” paragraphs are unnecessarily wordy

<b>Restriction.</b> IEEE_CLASS(X) shall not be invoked if IEEE_SUPPORT_DATATYPE(X) has the value false.	340:19-20
<b>Restriction.</b> IEEE_COPY_SIGN(X,Y) shall not be invoked if IEEE_SUPPORT_DATA- TYPE(X) or IEEE_SUPPORT_DATATYPE(Y) has the value false.	340:19-20
<b>Restriction.</b> IEEE_IS_FINITE(X) shall not be invoked if IEEE_SUPPORT_DATA- TYPE(X) has the value false.	342:29-30
<b>Restriction.</b> IEEE_IS_NAN(X) shall not be invoked if IEEE_SUPPORT_NAN(X) has the value false.	342:41-42
<b>Restriction.</b> IEEE_IS_NEGATIVE(X) shall not be invoked if IEEE_SUPPORT_DATA- TYPE(X) has the value false.	343:9-10
<b>Restriction.</b> IEEE_IS_NORMAL(X) shall not be invoked if IEEE_SUPPORT_DATA- TYPE(X) has the value false.	343:21-22
<b>Restriction.</b> IEEE_IS_LOGB(X) shall not be invoked if IEEE_SUPPORT_DATA- TYPE(X) has the value false.	343:33-34
<b>Restriction.</b> IEEE_NEXT_AFTER(X,Y) shall not be invoked if IEEE_SUPPORT_DA- TATYPE(X) or IEEE_SUPPORT_DATATYPE(Y) has the value false.	344:5-6
<b>Restriction.</b> IEEE_REM(X,Y) shall not be invoked if IEEE_SUPPORT_DATATYPE(X) or IEEE_SUPPORT_DATATYPE(Y) has the value false.	344:20-21
<b>Restriction.</b> IEEE_RINT(X) shall not be invoked if IEEE_SUPPORT_DATATYPE(X) has the value false.	344:33-34

**Restriction.** IEEE\_SET\_HALTING\_MODE(FLAG) shall not be invoked if IEEE\_SUPPORT\_HALTING(FLAG) has the value false. 346:18-19

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**Restriction.** IEEE\_SET\_ROUNDING\_MODE(ROUND\_VALUE) shall not be invoked unless IEEE\_SUPPORT\_ROUNDING\_MODE(ROUND\_VALUE,X) is true for some X such that IEEE\_SUPPORT\_DATATYPE(X) is true. 346:30-32

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**Restriction.** IEEE\_SUPPORT\_DENORMAL(X) shall not be invoked if IEEE\_SUPPORT\_DATATYPE(X) has the value false. 347:33-34

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**Restriction.** IEEE\_SUPPORT\_DIVIDE(X) shall not be invoked if IEEE\_SUPPORT\_DATATYPE(X) has the value false. 348:14-15

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**Restriction.** IEEE\_SUPPORT\_INF(X) shall not be invoked if IEEE\_SUPPORT\_DATATYPE(X) has the value false. 349:11-12

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**Restriction.** IEEE\_SUPPORT\_IO(X) shall not be invoked if IEEE\_SUPPORT\_DATATYPE(X) has the value false. 349:24-25

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**Restriction.** IEEE\_SUPPORT\_NAN(X) shall not be invoked if IEEE\_SUPPORT\_DATATYPE(X) has the value false. 349:37-38

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**Restriction.** IEEE\_SUPPORT\_ROUNDING(ROUND\_VALUE,X) shall not be invoked if IEEE\_SUPPORT\_DATATYPE(X) has the value false. 350:10-11

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**Restriction.** IEEE\_SUPPORT\_SQRT(X) shall not be invoked if IEEE\_SUPPORT\_DATATYPE(X) has the value false. 350:24-25

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**Restriction.** IEEE\_UNORDERED(X,Y) shall not be invoked if IEEE\_SUPPORT\_DATATYPE(X) or IEEE\_SUPPORT\_DATATYPE(Y) has the value false. 351:17-18

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**Restriction.** IEEE\_VALUE(X) shall not be invoked if IEEE\_SUPPORT\_DATATYPE(X) has the value false. 351:37-38

### 3 Semi-global change

Replace “ $2I X$ ” or “ $2IX$ ” by “ $X \times 2^I$ ” (for compatibility with the style used in Section 13 and to repair a  $\LaTeX$  conversion blunder) at the following places:

339:6 344:41 345:9 345:10 345:13

### 4 Questions to refer to John Reid

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Does the rounding mode affect the definition of “nearest”? 345:14-15

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[All of the other IEEE\_SUPPORT\_... routines allow array arguments. Indeed, the routines that allow array arguments X stipulate that they aren’t allowed to be executed unless IEEE\_SUPPORT\_DATATYPE(X) is true. So prohibiting array arguments here prohibits them everywhere that they appear to be allowed.] 347:19