Date: 26 March 1999
To: J3
From: Van Snyder
Subject: Even more stuff to put in the ISO_FORTRAN_ENV module

1   Background

It would occasionally be useful to be able to rename intrinsic procedures, for example, when upgrading a Fortran 77 program in such a way that it needs intrinsic procedures that have the same names as local variables of external procedures.

It is at present impossible to rename intrinsic procedures. If intrinsic procedures were available from the ISO_FORTRAN_ENV module they could be renamed.

2   Contrived example

```
program SALES_INVOICE
  use, intrinsic :: ISO_FORTRAN_ENV, only: ISO_PRODUCT => PRODUCT
  external :: PRODUCT            ! Relic of Fortran 77 version
                                ! Makes intrinsic PRODUCT unavailable
  character(len=40) :: PRODUCT ! Product code => product description
  ...
  full_discount = iso_product ( discounts )
  write ( out, 100 ) quantity, product(code), list_price, &
    100.0 * ( 1.0 - full_discount ), full_discount * list_price
  ...
end program SALES_INVOICE
```

3   Edits

Edits refer to 99-007r1. 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 the indicated line. Remarks for the editor are noted in the margin, or appear between [and] in the text.

[Editor: After "provides" insert "access to intrinsic procedures by use association (14.6.1.2), and".]   360:15

[Editor: Insert a new section 13.17.1 and renumber subsequent sections.]   360:21+

13.17.1 Intrinsic procedures.

All of the intrinsic procedures described in Section 13 are also available as intrinsic module procedures from the ISO_FORTRAN_ENV intrinsic module.

If an intrinsic module procedure is accessed from the ISO_FORTRAN_ENV intrinsic module with a USE statement containing an ONLY clause, all other intrinsic procedures remain accessible. This feature allows renaming intrinsic procedures, not excluding them.

Note
13.16.2

4 Alternatives (straw vote?)

1. Do what's proposed here.

2. Allow *local-name => intrinsic-procedure-name* in an INTRINSIC statement (12.3.2.3).

3. Allow an INTRINSIC statement to appear in an interface block. This isn't a complete solution, because the generic name of the interface block can't be used as an actual argument.

4. Do nothing.

5 Remarks

This facility is useful only if one needs to use an intrinsic procedure within a scoping unit in which a local variable or external procedure has the same name.

Mechanisms already present in Fortran 90 allow users to avoid such conflicts as illustrated above, but at the expense of some work. The proposed mechanism would be simpler to use.

In addition to schedule constraints, implementors' advice concerning costs and difficulty should be weighed against convenience to users to determine whether this is worth doing.