Subject: More little problems with procedure pointers
From: Van Snyder
References: 00-180r2(or a later revision)

1 Introduction

There are several problems with procedure pointers that are separately described in the *Edits* subsections.

Also, The description of structure constructors does not adequately account for procedure pointer components. This issue is addressed in 00-180r2 (or a later revision).

2 Edits

Edits refer to 00-007r1. 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.

2.1 Edits – Item 1

It isn't clear that it is allowed to specify intent for dummy procedure pointers.

NOTE 5.13$\frac{1}{2}$ 71:19+

A dummy procedure pointer is not a dummy procedure. Therefore, INTENT may be specified for a dummy procedure pointer.

2.2 Edits – Item 2

Whether a dummy procedure is a pointer ought to be a characteristic.

[Editor: Replace "is either" by "has the characteristic that it is".] 244:9

2.3 Edits – Item 3

There are dueling constraints in section 7.5.2 concerning the types of *pointer-object* and *target* if *pointer-object* is a procedure pointer.

[Editor: Insert "If *pointer-object* is not a procedure pointer" at the beginning of the constraint. Otherwise this constraint and the one at [136:22-25] conflict.] 136:14

2.4 Edits – Item 4

Malcolm doesn't like this proposal because prohibiting nonrecursive procedures to have explicit interfaces from within themselves makes it difficult to use them as dummy arguments from

within themselves, and therefore difficult to cause an erroneous recursion by mistake. Maybe there is also another subtle reason for the status quo.

J3 internal note 245:8+

Unresolved issue xxx.
It ought to be possible to assign a procedure to a procedure pointer with explicit interface from within itself. It's not always possible because the only procedures that have explicit interfaces from within themselves are recursive subroutines and recursive functions that have a result variable different from their names. It may (or may not) be enough to delete "recursive" twice above, and change "occurrences of the function name" to "references to the function" in 12.5.2.1.

2.5 Edits – Item 5

A procedure is neither an *expr* nor a *variable*. Therefore, the *target* in a pointer assignment can't be a procedure!

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or *procedure-name* 136:7+

2.6 Edits – Item 6

There is no constraint or other prohibition against pointer-assigning a procedure to a pointer that is not a procedure pointer.

Constraint: If the *target* is the specific name of an external, module or dummy procedure, a specific intrinsic procedure listed in 13.15 and not marked with a bullet (•), a procedure pointer, a reference to a function that returns a procedure pointer, or a reference to the NULL intrinsic function, the *pointer-object* shall be a procedure pointer. 136:31+