

Subject: Remove prohibition against recursive specification functions
 From: Van Snyder
 References: 00-289

1 Discussion

Recursive specification functions, e.g. **FACTORIAL**, are useful and not, in themselves, harmful. There can be no infinite recursion except by a mutual recursion of the specification function and the procedure in which it is contained, involving only specification functions, which requires them both to be recursive. Although prohibiting recursive specification functions prevents nonterminating recursive invocations of the procedures in which they appear in specification expressions, it is a case of using a hammer to kill a fly. Specification functions are just another sharp knife in a large armory full of sharp knives, swords and spears. The prohibition at [122:3-4] against recursive specification functions should be removed.

In paper 00-261, WG5 advocates to remove this restriction.

There is the potential for a problem, that some implementations may find difficult to surmount, if a recursive invocation of a procedure occurs while its activation record is being constructed.

2 Edits

Edits refer to 00-007r3. 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 for the editor are noted in the margin, or appear between [and] in the text.

[Editor: Insert “and” before “does”, delete “, and is not defined with the RECURSIVE keyword”.] 122:3-4

[Editor: Add a new paragraph:] 122:4+
 Evaluation of a specification expression shall not directly or indirectly cause a procedure defined by the subprogram in which it appears to be invoked.

The prohibition against recursion prevents attempting to create a new activation record while construction of one is in progress. 122:11-15