Subject: Remove prohibition against recursive specification functions
From: Van Snyder

1   Discussion

Recursive specification functions, e.g. `FACTORIAL`, are useful and not, in themselves, harmful. There can be no problem 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 [118:2-3] against recursive specification functions should be removed. If some kind of paternalistic prohibition is really desired, it is enough to require that the specification function and the procedure in which it is referenced as a specification function shall not both be recursive. Removing this restriction would not invalidate any existing program.

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

One could also make a case that the restriction against a specification function having a dummy procedure argument is also unnecessary, since the requirement of pureness of the specification function implies that any procedure arguments it has are also pure. Removing this restriction would not invalidate any existing program, but would be a specification change that has not been requested by WG5.

2   Edits – Remove restriction against recursion

Edits refer to 00-007r2. 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".]	118:2-3
[Editor: Delete.]	118:10-14

3   Edits – Remove restriction against a dummy procedure

[Editor: Insert "and" before "is", remove "and" inserted by the previous edit, and remove "does not have a dummy procedure argument".]	118:2