Subject: Remove unnecessary restrictions on the VALUE attribute
From: Van Snyder

Number

TBD

Title

Remove unnecessary restrictions on the VALUE attribute.

Submitted By

J3

Status

For consideration.

Basic Functionality

Remove unnecessary restrictions on the VALUE attribute.

Rationale

The restrictions on the use of the VALUE attribute appear to have been applied in an attempt to guarantee that every circumstance in which it is used will result in higher performance than if it is not used — for example, the argument may be passed in a register.

This attempt has failed however, because derived-type arguments, including polymorphic ones, are allowed to have the VALUE attribute.

Allowing more generality for the VALUE attribute will he useful. It does not pose any operational difficulty that is not already posed by automatic objects. The only potential performance implication is that for "large" objects, it will be necessary to take a copy of the argument — but that requirement exists already. Textbook writers will probably mention this. Maybe it's worth a note in 5.1.2.15. If the VALUE attribute is handled on the caller's side, it may frequently be possible to suppress the copy. Even if it's handled on the callee's side, the caller could send along a flag that says "It's not necessary to take a copy." In these two cases, the VALUE attribute is even simpler than automatic objects.

Estimated Impact

Trivial for the standard, probably bordering on trivial for implementations.

Detailed Specification

[Remove ", DIMENSION" from C527. Cannonball polishing: Put the rest of the attributes in alphabetical order.]	73:20
[Delete constraint C528. Deferred type parameters are covered by a conspiracy of C403 and C527.]	73:22-23
C544$\frac{1}{2}$ (R516) An assumed-size array shall not have the VALUE attribute.	80:10+

History