

Doc. No.: X3J16/95-0106
WG21/N0706
Date: May 30, 1995
Project: Programming Language C++
Reply To: Patrick Smith
pat@tesuji.qc.ca

Wording in Conformance definitions

These are some suggestions for improving the wording of some of the text in Chapter 1 touching upon conformance issues.

About the definitions of implementation-defined, unspecified, and undefined behaviour in 1.3:

These terms are explained in more detail in 1.8, so the definitions in 1.3 should have references to 1.8.

The mention of correct/erroneous programs and data in these definitions is confusing. There seems to be an assertion here that programs with implementation-defined or unspecified behavior are "correct" in some sense, but it is not clear what sense is intended.

Since there are better definitions of these terms in 1.8, I suggest simply removing the references to correct and erroneous programs?

The examples in the definition of "undefined behavior" are a bit confusing. The juxtaposition of "behaving ... in a documented manner (with or without ... a diagnostic ...)" and "terminating ... execution (with ... a diagnostic ...)" suggests that, if the program is terminated, there must be a diagnostic. Producing a diagnostic is certainly a good idea, but should not be required. I suggest adding "or without" to the last parenthesized phrase.

If we apply all the above suggestions, then these three definitions would become:

- implementation-defined behaviour: Behaviour that depends on the implementation and that each implementation shall document (1.8). The range of possible behaviours is delimited by the standard.
- undefined behaviour: Behaviour for which the standard imposes no requirements (1.8). Permissible undefined behaviour ranges from ignoring the situation completely with unpredictable results, to behaving during translation or program execution in a documented manner characteristic of the environment (with or without the issuance of a diagnostic message), to terminating a translation or execution (with or without the issuance of a diagnostic message).
- unspecified behaviour: Behaviour that depends on the implementation. The implementation is not required to document which behaviour occurs (1.8).

Page 2

The definition of unspecified behaviour in 1.3 says "usually the range of possible behaviours is delineated by the standard." 1.8p3 says "In each case ...". These two sections should agree

on whether it is "usually" or "always". Unless we are confident that the standard does (or will) document the possibilities in every case, I suggest changing "In each case" in 1.8p3 to "In most cases".

The term "diagnosable errors" is used in 1.7p2, but not defined. Perhaps we could change the end of 1.7p1 to

... that contains a diagnosable error, except as noted in this International Standard. A diagnosable error is a violation of any diagnosable semantic rule or of any syntax rule.