# The New C Standard (Excerpted material)

## An Economic and Cultural Commentary

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# 3. Terms, definitions, and symbols

**C90**

The title used in the C90 Standard was "Definitions and conventions".

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For the purposes of this International Standard, the following definitions apply. 30

**Commentary**

These definitions override any that may appear in other standards documents (including ISO 2382). In some cases terms used in the standard have a meaning that is different from their *plain* English usage. For instance, in:

```
1  int x_1,
2      x_2;
3
4  void f(void)
5  {
6  int x_1;
7  }
```

scope same the objects x_1 and x_2, at file scope, are said to have the same scope. However, there is a region of the program text in which one of these identifiers, x_1, is not visible (because of a declaration of the same name in a nested block).

**C++**

1.3p1 *For the purposes of this International Standard, the definitions given in ISO/IEC 2382 and the following definitions apply.*

17p9 *The following subclauses describe the definitions (17.1), and method of description (17.3) for the library. Clause 17.4 and clauses 18 through 27 specify the contents of the library, and library requirements and constraints on both well-formed C++ programs and conforming implementations.*

**Coding Guidelines**

Some writers of coding guidelines find the definition of terms used in the C Standard hard to understand, or at least think that their readers might. This belief then becomes the rationale for creating a *less-experienced, reader friendly* definition of terms. Your author knows of no published, or unpublished, survey of the ease, or difficulty, developers have with various technical terms. Having two sets of definitions of terms is likely to lead to confusion. There is no evidence that one set of terms is better, or worse, than any other.

Rev 30.1 The definition of terms, as defined in the C Standard and standards referenced by it, shall be used in coding guideline documents.

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terms defined where Other terms are defined where they appear in *italic* type or on the left side of a syntax rule. 31

**Commentary**

In most cases the first use of a term is also where it is defined and hence where it usually appears in italic type.

**C90**

The fact that terms are defined when they appear "on the left side of a syntax rule" was not explicitly specified in the C90 Standard.

**Coding Guidelines**

A coding guidelines document cannot assume that its readers will start at the front and read each rule in turn. There are obvious advantages to collecting all terms, with a meaning specific to the guidelines, in an index or collecting them together in an annex. This is a usability issue that is outside the scope of these guidelines.

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32 Terms explicitly defined in this International Standard are not to be presumed to refer implicitly to similar terms defined elsewhere.

**Commentary**

The C Standard is absolving itself of any similar terms that may be defined in any other standard.

**Coding Guidelines**

A coding guideline shall state that the terms defined by the C Standard are the ones that apply to itself.

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33 Terms not defined in this International Standard are to be interpreted according to ISO/IEC 2382–1.

**Commentary**

Terms defined in the C Standard take precedence. If the term is not defined there, refer to ISO/IEC 2382–1 ISO 2382
(Part II of ISO/IEC 2382 deals with mathematical and logical operations and is also a useful source of definitions). There has been discussion within the Committee on terms that are not defined by either document, but are technical in nature. In these cases the common dictionary usage has been claimed to be applicable. The ISO Directives specify that the two dictionaries *The Shorter Oxford English Dictionary* and *The Concise Oxford Dictionary*, provide the definitions of nontechnical words.

**C++**

> *For the purposes of this International Standard, the definitions given in ISO/IEC 2382 and the following definitions apply.* 1.3p1

The C++ Standard thus references all parts of the above standard. Not just the first part.

**Coding Guidelines**

While the above might appear to be a good sentence to include in a coding guidelines document, most developers are unlikely to have easy access to a copy of ISO/IEC 2382–1.

Rev 33.1 All technical terms used in a coding guidelines document shall be defined in that document.

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34 Mathematical symbols not defined in this International Standard are to be interpreted according to ISO 31-11.

**Commentary**

The ISO/IEC 2382-II Standard deals with mathematical and logical operations but is not referenced by the C Standard. It is not known if there are any incompatibilities between this document and ISO 31-11.

# References