X3J16/90-0012

March 9, 1990

X3J16 Goals Working Group
e-mail:x3j16-goals@europa.att.com

To: X3J16 Committee Members

Proposed Goals for X3J16 (version 2)

1 To ensure rapid completion of the standard, adopt two base documents: Stroustrup's Annotated C++ Reference Manual and the X3J11 (ANSI C) standard.

What do we mean by a base document? We mean simply that we accept these documents as a very close approximation to our expected standard (at least in terms of content if not form). Anything listed in a base document will become part of the standard unless specifically challenged. A base document can be amended or extended, period. The proposed schedule for the standard and priorities listed under other goals will, however, severely limit the scope of changes to a base document.

Experimental features - exception handling and parameterized types - will not be considered part of the base documents but will instead be considered as proposals for standardization. Material not seen in previous versions of the 2.0 specification will be subject to closer review and more revision than other parts of this base document.

2 Standardize the core C++ language covered in the base documents.

This will be a long and meticulous exercise, beginning with simply understanding the content of the base documents. A format and vocabulary will have to be chosen consistent with ANSI standards. A large draft document will have to be prepared. The primary effort will be to clarify and resolve inconsistencies in the base documents. Preprocessing and libraries are not considered part of the core language.

Priorities: (in order)
Clear and unambiguous specification
Compatibility with Stroustrup reference manual
Compatibility with ANSI C
Consistency
Portability
Efficiency
Expressiveness
Ease of implementation including feasibility of translation to C

3 Define and standardize a set of C++ libraries - an input/output library at minimum.

Outside of an input/output library, it's not clear that there is a concensus for standardizing anything else. A strong working group proposal will be needed for approval of any other libraries.

Priorities: (in order)
Favorable implementer and user experience
Expressiveness
Portability
Efficiency

4 Standardize elements of a C++ environment including headers,

preprocessing, program structure, program invocation, program termination, and interface to other languages.

X3J11 addressed many of these environment issues. They are issues with every C++ implementation as well. Outside of these items, a strong work group proposal will be necessary to generate concensus.

Priorities: (in order)
Compatibility with base documents
Favorable implementer and user experience
Expressiveness
Portability
Efficiency

5 Define a set of major extensions to the base documents including parameterized types and exception handling.

Parameterized types and exception handling are well known missing features in C++. Users want them; vendors want to implement them. X3J16 should provide guidance as soon as possible for implementation of these features so that the C++ community does not split into multiple definitions of the same features.

Major new extensions must be validated by favorable implementation experience to avoid standardizing something noone will use.

Priorities: (in order)

Clear and unambiguous specification
Compatibility with Stroustrup Reference Manual
Compatibility with ANSI C
Favorable implementer and user experience
Consistency
Portability
Efficiency
Expressiveness
Ease of implementation including feasibility of translation to C

6 Ensure that the X3J16 standard is suitable for the international community.

Knowledgeable people have claimed that international issues delayed X3J11 by up to two years. X3J16 should learn from this and dispose of this issue early. Native character handling is a known concern. Other issues such as formal specification will likely be of concern to the international community. The work group handling this goal needs to be active in recruiting international members to X3J16 and in soliciting opinions from the international community.

Priorities: ONE international standard.

7 Ensure a very high level of compatibility with ANSI C. Establish a voting liason with X3J11 (ANSI C).

Existing C++ implementations are almost completely compatible with ANSI C. This must be maintained. Complete, 100% compatibility is not forseen, however, each incompatibility should be carefully documented and justified. New incompatibilities with ANSI C should be routinely rejected unless deemed critical. X3J16 should influence the direction of X3J11 via a voting liason to help maintain compatibility.

8 Establish a set of work groups which can function in parallel to address the goals of X3J16 and other issues which come to its attention.

Work groups should do the bulk of the work of the

committee. X3J16 should ratify or reject work group results - not try to do the detail work.

9 X3J16 should produce three deliverables: a standard, a rationale, a set of examples.

A section of the rationale on the purpose of the standard, similar to that found in X3J11 should be drafted immediately and ratified. This will help guide the work of the committee.

Except for the formal grammar specification, precise English will be used to describe the standard. This does not preclude work on a formal specification as an optional part of the standard.

The standard should include sections on portability, C/C++ compatibility, and limits/implementation restrictions.

10 Deliver a draft standard to X3 by early 1992 covering all areas specified in the X3J16 goals.

It's important to enforce a time schedule. This will help restrain committee members from worrying about low priority issues. This is an ambitious schedule but it is hoped that approval of base documents will greatly speed up the process.

summer 1990	purpose section of rationale outline of intended results from each work group
spring 1991	work group results due
late 1991	first draft C++ standard approved by X3J16
early 1992	draft standard submitted to ISO/X3 for public comment