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X3J16/96-0061
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Project: Programming Language C++
Reply to: Dan Saks
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Minutes
ISO/IEC JTC1/SC22/WG21 Meeting No. 15
10 - 15 March 1996

Dream Inn Resort
175 West Cliff Drive
Santa Cruz, CA 95060 USA

1 Opening and introductions

Harbison convened the meeting at 18:05 (PST) on Sunday, 10 March 1996.

1.1 Welcome from host

1.2 Roll call of technical experts

The attendance list appears as Appendix A.

1.3 Select meeting chair

Harbison offered to chair the meeting, and no one objected.

1.4 Select meeting secretary

Harbison affirmed that Saks would be the secretary for this meeting.

1.5 Select language

Harbison suggested that WG21 conduct this meeting in English, and no one objected.

1.6 Adopt agenda

Harbison presented the proposed agenda SD-0 (revised 2 March 1996), and recommended adding the following items:

3.4 Copyright Issues

3.5 Meetings and Mailings

WG21 accepted the agenda with these changes.

1.7 Select drafting committee

As usual, Saks will coordinate the drafting committee. Corfield, Hartinger, Rumsby and Unruh offered to participate.

1.8 Approve minutes from previous meeting

Saks submitted N0816 = 95-0216 for approval as the minutes of the previous meeting. WG21 accepted the minutes without change.

1.9 Review action items from previous meeting

None.

1.10 Recognize documents

None.

2 Status, liaison and action item reports

2.1 Small group status reports

None.

2.2 Liaison Reports

2.2.1 SC22/WG11 (Binding Techniques) report

No report.

2.2.2 SC22/WG14 (C) report

Deferred to the joint meeting with X3J16.

2.2.3 SC22/WG15 (POSIX) report

No report.

2.2.4 SC22/WG20 (Internationalization) report

No report.

3 New Business

3.1 Review changes to working paper

Deferred to the joint session with X3J16.

3.2 CD Comment Resolution Status

Harbison said he must prepare a written "disposition of comments" for SC22, describing WG21's response to each NB (national body) comment from the CD ballot. He said he expected each NB to convey to him this week whether WG21 has adequately addressed its comments.

3.3 Comment Resolution Procedure

Harbison asked if anyone had concerns about how their NB comments would be addressed.

Koenig said he understood we could still make substantive changes to the draft to correct problems during ballot. Harbison said we could, but we should try to avoid it.

Koenig said there was a proposal before WG21+X3J16 to abolish separate compilation of templates. If that proposal were to pass, the ensuing editing work would delay the standard at least one and maybe two meetings. However, since that proposal did not address any NB requirements, we might not need to address it. Hartinger said the template compilation model was one of Germany's concerns.

Koenig said that after the Tokyo meeting, Corfield said he'd look at the WP (working paper) to identify the outstanding problems in the template specification. Corfield later reported via email that he found no problems -- that the template clause was clear enough. Koenig also said some people have claimed that templates can't be implemented efficiently (at translation-time, not run-time). Koenig said he didn't think anything would be gained by rewriting WP to allow more efficient implementations. He thought the current specification allowed implementations that were efficient-enough.

Stroustrup said separate compilation of templates is important and has been part of the template specification since the beginning. We should not remove it.

Corfield said that there are at least two and perhaps three national bodies that would vote against the CD if separate compilation of templates were to disappear. He explained that the problem is really one of name lookup. All the problems with separate compilation of templates are also problems with compiling a single source file using multiple namespaces. Unruh replied that there is at least one problem with the separation model that is not a problem with the inclusion model. He presented that problem to the Core III WG in Tokyo.

Harbison asked if anyone had concerns about the library.

Koenig said that, as it stands, it does not allow a "set of pointers". Stroustrup said he has one paper on a problem in the library that needs to be addressed, but otherwise, he likes the library.

Unruh said that, just because there are no major issues in the library, that doesn't mean the library is good enough. Also, at present, there's no compiler that can compile the entire library. There are parts of the library specification that are syntactically incorrect. Also, there's a problem with the interaction of constness and templates. He didn't think we could iron out all the problems until compilers can actually compile the library and people can use it.

Hartinger said that name binding during template compilation is still a concern for the German delegation.

Koshida said Japan is concerned about wide characters in strings and streams. He said they are generally satisfied, but a few minor problems remain. He said Japan is not concerned about the template issues, but they do have concerns about the proposal for extended characters in identifiers.

Clamage said he was concerned about the sheer number of issues on the Library issues lists. He didn't see how we could close them all this meeting.

Harbison said it appears that there are three issues of particular concern to the NBs:

- Extended Characters
- The State of the Library
- Template Compilation Model

We need to make sure there's a procedure in place to address each of these at this meeting.

Harbison asked the NBs where they stand on each issue:

- Extended Characters

Plum said he discussed the extended character proposal with Kumagai, and he (Plum) believes there's no real problem; small changes will make everyone happy. He said we still need to work on it this week, but we should be able to resolve the issues this week. The work will be done in the C Compatibility WG.

Plum later suggested we will have fewer proposals for extensions and changes if we recommend a CD ballot rather than slip the schedule.

- The State of the Library

Kiefer said he had no strong opinion about the state of the library, but he did notice that the issues list doubled in size between the last meeting and this one.

Plauger agreed that the sheer number of details is the enemy of getting the library to converge. That's his biggest concern. No one issue is that great. Rumsby concurred. Corfield also concurred, adding that it was unlikely we would get through all the small issues this week.

Koenig noted that the question was really whether we were likely to need a third CD. Corfield said the UK would rather not vote on advancing the second CD until this summer's meeting in Stockholm.

Harbison said he heard concerns, but no one said drastic action is needed.

Stroustrup agreed with Plum that going to another CD ballot will cut down on the proposals for changes.

For the record, Harbison raised the issue of splitting the library standard from the language standard, and observed that no one supported it.

-- Template Compilation Model

Hartinger said he thought that the current specification for separate compilation of templates is a problem for both implementors and users. For users, the problem is error reporting; for implementors, it's implementability.

Corfield said the template compilation model is no longer a problem for the UK.

Hartinger explained that, if the separate-compilation model can be specified to satisfy their needs, then it need not be eliminated. Unruh said that, given choice between removing separate compilation of templates and leaving the WP as is, Germany would vote to remove.

Bruck said Sweden's position is that if the model were changed, they would vote "no" on the CD.

Harbison observed that this might be a "blocking" issue. He added that we don't know what the US position on this will be.

Lajoie said the Core III WG (chaired by Gibbons) would discuss this issue. Unruh preferred to address this in a technical session on Monday evening, rather than in a WG session. WG21 discussed whether to address this issue in Core III or in an evening technical session. Lenkov preferred the technical session; Bruck preferred Core III. Lenkov suggested spending no more than an hour on the issue in Core III, and if no progress is made, continuing in the technical session.

Hartinger said something is wrong if a minority feels they must operate outside the committee to have their needs addressed. Plauger explained that, if the majority feels that nothing they do will satisfy the minority, then the majority must document the steps they've taken to satisfy the minority.

Harbison agreed with Lenkov, that Core III should discuss template compilation models on Monday afternoon, limiting discussion to about an hour. If more discussion is needed, it should continue in the evening technical session. Bruck said he thought this was the wrong way to handle this.

3.4 Copyright Status

Harbison said we have the precedents we need to publish the CD electronically to the public during the CD ballot. It's not clear if we have such permission with a draft that is not a CD, or any other

committee document.

3.5 Meetings and Mailings

Harbison announced that Digital offered to host the March '97 meeting in Nashua, NH, USA.

4 Closing process

4.1 Select chair for next meeting

Harbison offered to prepare the agenda for the next meeting and act as chair.

4.2 Establish next agenda

The committee's agenda will be essentially the same as this one.

4.3 Future meetings

See item 3.5.

4.4 Future mailings

No discussion.

4.5 Assign document number(s)

None.

4.6 Review action items

None.

4.7 Any other business

None.

4.8 Thanks to host

WG21 thanked Borland for hosting the meeting.

4.9 Adjournment

WG21 recessed at 20:15 on Sunday and reconvened in joint session with X3J16. See the corresponding WG21+X3J16 meeting minutes (N0880 = 96-0062).

Appendix A - Attendance

Name	Affiliation; (*) = Head of Delegation
Lajoie, Josee	Canada (*)
Harbison, Sam	Convener
Stroustrup, Bjarne	Courtesy
Hartinger, Roland	Germany (*)
Kiefer, Konrad	Germany
Unruh, Erwin	Germany
Koshida, Ichiro	Japan (*)
Bruck, Dag	Sweden (*)
Corfield, Sean	UK
Glassborow, Francis	UK
Rumsby, Steve	UK (*)
Southworth, Mark	UK
Clamage, Steve	USA

Koenig, Andrew	USA / Project Editor
Lenkov, Dmitry	USA
Plum, Thomas	USA (*)
Saks, Dan	USA / Secretary
Plauger, P. J.	WG14 Convener