

Doc No: SC22/WG21/N3381  
PL22.16/12-0071  
Date: 2012-02-29  
Project: JTC1.22.32  
Reply to: Kyle Kloeppe  
Riverbed Technology  
Kyle.Kloeppe@riverbed.com

# Minutes

PL22.16 Meeting No. 58  
WG21 Meeting No. 53  
6-10 February 2012 Kona, Hawaii, USA

**Chair:** Stephen D. Clamage  
**Secretary:** Kyle Kloeppe

## 1. Opening activities

Clamage calls the meeting to order at 8:36 (UTC-10) Monday 6 February 2012.

### 1.1 Opening comments, welcome from host

Tom Plum welcomes the attendees and provides organizational information.

### 1.2 Introductions

Clamage has attendees introduce themselves.

### 1.3 Meeting guidelines (Anti-Trust)

Clamage directs group to the following websites without further comment:

- [http://www.incits.org/pat\\_slides.pdf](http://www.incits.org/pat_slides.pdf)
- <http://www.incits.org/inatrust.htm>

### 1.4 Membership, voting rights, and procedures for the meeting

Clamage explains this is a joint meeting of WG21 and PL22.16 and describes straw polls. Nelson reviews guidelines for filling in the attendance sheet.

## 1.5 Agenda review and approval

Clamage presents the agenda (document PL22.16/11-0087 = WG21/N3317). There is one change: end time on Tuesday will be at 4 p.m. instead of 5 p.m. because of the dinner cruise which departs at 5 p.m.

**Motion to approve the agenda as amended:**

**Moved by:** Crowl

**Seconded by:** Liber

PL22.16	
In favor:	28
Opposed:	0
Abstain:	0

## 1.6 WG progress reports and work plans for the week

### Progress Reports

Each Working Group chair presents group progress and plans for the coming week.

## 1.7 Approval of the minutes of the previous meeting

**Motion to approve the minutes (N3315/N3316)**

**Moved by:** Halpern

**Seconded by:** Hinnant

PL22.16	
In favor:	28
Opposed:	0
Abstain:	0

## 1.8 Liaison reports

### WG14 Report

Plum reports that the C received a 2011 revision number. C is currently working on technical specification for secure coding rules driven by CERT and CMU. They are also starting a floating point addendum to match changes in IEC 754.

## 1.9 Editor's report

Du Toit thanks everyone who is contributing editorial fixes. The draft sources are up on github (<https://github.com/cplusplus/draft>). Brown asks if there are plans to produce color coded change marks. Du Toit says an automated system is in the works. Du Toit is also planning to have the same cycle Becker did and have changes reviewed the week before mailing deadline.

## 1.10 New business requiring actions by the committee

Clamage asks if there is any new business. No response.

## 2. Organize subgroups, establish working procedures.

Sutter leads discussion about schedule for C++. This discussion ends with straw polls.

### Straw poll: No standard before 2022

Room	
Strongly for	0
Weakly for	4
Don't know or don't care	15
Weakly against	19
Strongly against	20

### Straw poll: Pick a year at this meeting that we want to be a target for completion of the next standard

Room	
Strongly for	30
Weakly for	18
Don't know or don't care	5
Weakly against	6
Strongly against	2

**Straw poll: Pick a year at this meeting that we want to cut off new concrete feature proposals for the next standard without picking a completion date**

<b>Room</b>	
Strongly for	26
Weakly for	12
Don't know or don't care	4
Weakly against	7
Strongly against	4

**Straw poll: Target completion of C++1y in 2016**

<b>Room</b>	
Strongly for	14
Weakly for	12
Don't know or don't care	14
Weakly against	9
Strongly against	5

**Straw poll: Target completion of C++1y in 2017**

<b>Room</b>	
Strongly for	5
Weakly for	23
Don't know or don't care	17
Weakly against	4
Strongly against	1

**Straw poll: Target completion of C++1y in 2018**

<b>Room</b>	
Strongly for	9
Weakly for	9
Don't know or don't care	14
Weakly against	16
Strongly against	6

Clamage announces that those present will break up into working groups until Thursday afternoon. He notes that the committee is in recess until then.

### **3. WG sessions (Core, Library, and Evolution).**

The group breaks up to meet in separate working group sessions.

**Tuesday 7 February 8:00 a.m. – 4:00 p.m.**

**4. WG sessions continue.**

**Wednesday 8 February 8:00 a.m. - 5:00 p.m.**

**5. WG sessions continue.**

**Thursday 9 February 8:00 a.m. - 11:30 p.m.**

**6. WG sessions continue.**

**Thursday 9 February 1:00 p.m. – 2:45 p.m.**

**7. General session.**

**7.1 WG status and progress reports.**

Clamage calls general session to order. Clamage asks for working group status reports.

**Core Working Group**

Miller presents CWG status.

**Library Working Group**

Meredith presents LWG status.

**Concurrency Working Group**

Boehm reports Concurrency status.

**Evolution Working Group**

Stroustrup presents EWG status.

## **7.2 Presentation and discussion of proposed responses to public comments. Straw votes taken.**

Clamage asks if there is any other business. No response.

Group breaks into subgroups for the rest of the day.

## **Thursday 9 February 2:45 p.m. – 5:00 p.m.**

### **8. WG sessions continue.**

## **Friday 10 February 8:00 a.m. – 11:30 a.m.**

### **9. WG sessions continue**

## **Friday 10 February 1:00 p.m. – 2:00 p.m.**

### **10. Review of the meeting**

Clamage calls the meeting to order. Roll call shows 21 PL22.16 and 8 WG21 voting members present.

#### **10.1 Motions**

##### **Core motions**

Move we apply all issues in ready status from [N3330](#) except for issues [974](#), [975](#), and [1302](#), to the C++ Working paper: [292](#) [332](#) [388](#) [462](#) [482](#) [483](#) [535](#) [539](#) [565](#) [577](#) [597](#) [712](#) [729](#) [1003](#) [1093](#) [1226](#) [1250](#) [1251](#) [1260](#) [1262](#) [1264](#) [1265](#) [1275](#) [1282](#) [1288](#) [1293](#) [1295](#) [1296](#) [1297](#) [1298](#) [1301](#) [1305](#) [1306](#) [1308](#) [1311](#) [1324](#) [1327](#) [1329](#) [1333](#) [1336](#) [1340](#) [1345](#) [1346](#) [1347](#) [1350](#) [1352](#) [1355](#) [1357](#) [1362](#) [1364](#) [1365](#) [1366](#) [1367](#) [1368](#) [1369](#)

**Moved by:** Miller

**Seconded by:** Hedquist

<b>PL22.16</b>	
In favor:	21

Opposed:	0
Abstain:	0

## Library motions

### Motion 1

Move we apply the resolutions of all issues in "Ready" and "Tentatively Ready" status from [N3318](#), with the exception of issue 2013, to the C++ Working Paper.

- [1214](#) Insufficient/inconsistent key immutability requirements for associative containers
- [2009](#) Reporting out-of-bound values on numeric string conversions
- [2010](#) `is_*` traits for binding operations can't be meaningfully specialized
- [2015](#) Incorrect pre-conditions for some type traits
- [2021](#) Further incorrect usages of `result_of`
- [2028](#) `messages_base::catalog` over specified
- [2033](#) Preconditions of `reserve`, `shrink_to_fit`, and `resize` functions
- [2039](#) Issues with `std::reverse` and `std::copy_if`
- [2044](#) No definition of "Stable" for copy algorithms
- [2045](#) `forward_list::merge` and `forward_list::splice_after` with unequal allocators
- [2047](#) Incorrect "mixed" move-assignment semantics of `unique_ptr`
- [2050](#) Unordered associative containers do not use `allocator_traits` to define member types
- [2053](#) Errors in regex bitmask types
- [2061](#) `make_move_iterator` and arrays
- [2064](#) More `noexcept` issues in `basic_string`
- [2065](#) Minimal allocator interface
- [2067](#) `packaged_task` should have deleted copy c'tor with `const` parameter
- [2069](#) Inconsistent exception spec for `basic_string` move constructor
- [2096](#) Incorrect constraints of `future::get` in regard to [MoveAssignable](#)
- [2102](#) Why is `std::launch` an implementation-defined type?

**Moved by:** Meredith

**Seconded by:** Liber

PL22.16	
In favor:	21
Opposed:	0
Abstain:	0

### Motion 2

Move we apply [N3346](#), Terminology for Container Element Requirements - Rev 1, to the C++ Working Paper.

**Moved by:** Meredith

**Seconded by:** Halpern

<b>PL22.16</b>	
In favor:	21
Opposed:	0
Abstain:	0

### **Additional Motions**

Nelson moves to thank the hosts. Applause ensues.

### **10.2 Review of action items, decisions made, and documents adopted by the committee**

None.

### **10.3 Issues delayed until today.**

Clamage asks if there are other issues. Sommerlad announces a call for papers for a refactoring tools conference that will be taking place in Rapperswil, Switzerland.

## **11. Plans for the future**

### **11.1 Next and following meetings**

Sutter presents the meeting schedule for upcoming meetings:

- 15-19 October 2012: Portland, Oregon, USA – Sponsored by Intel
- 15-19 April 2013 (tentative): Bristol, UK
- Fall 2013: Chicago, Illinois, USA – Sponsored by DRW Trading Group
- Spring 2014: Rapperswil, Switzerland
- Fall 2014: Urbana-Champaign, Illinois, USA – Sponsored by The University of Illinois at Urbana-Champaign

Meredith asks if we can move back to six day meetings. Stroustrup says six day meetings would be helpful for EWG. After some discussion Sutter takes a straw poll to check for consensus.

### **Straw poll: Switch from current five day meetings to six day meetings**

<b>Room</b>	
In favor:	29
Opposed:	8
Abstain:	12



Sutter decides there is consensus to switch to six day meeting. Too late to switch Portland, but Bristol may be able to change to six day meeting.

After further discussion a straw poll is taken for when to have consensus building session and formal voting.

**Straw poll: When to have consensus building meeting and formal votes**

Room	
Friday morning, Saturday morning	11
Friday afternoon, Saturday morning	15
Friday afternoon, Saturday afternoon	17

Sutter says we will stick with original proposal of Friday afternoon consensus building and Saturday afternoon closing. Spicer requests a straw poll to see if there is stronger preference for Saturday morning or Saturday afternoon.

**Straw poll: When to have consensus building meeting and formal votes**

Room	
Friday morning, Saturday morning	11
Friday afternoon, Saturday morning	15
Friday afternoon, Saturday afternoon	17

Sutter says it looks like a tie. He suggests that we think about it and make the call in Portland.

Sutter announces the new Study Group chairs. He asks SG4 chair Kyle Kloepper if they plan to have meetings between now and Portland. Kloepper says SG4: Networking will be having a teleconference in March and a face to face early summer. Sutter states the Dawes is char for SG3: File System. Dawes has already departed Kona and will announce meetings via reflector. Sutter says that SG1: Concurrency and Parallelism (chair: Hans Boehm) will have a meeting in Redmond sometime early summer.

Sutter also announces the teleconference that takes place the Friday before each face to face meeting. The teleconference does no technical work. Its purpose is to go through all papers to make sure they will be handled.

Sutter gives short presentation on ISO process. A key point is that with a TR the votes can be done between meetings. If Sutter is informed in Portland a final ballot could come as early as the spring 2013 UK meeting.

## **11.2 Mailings**

Nelson reviewed the following mailing deadlines:

- Post-Kona: 24 February 2012
- Pre-Portland: 21 September 2012

## **12. Adjournment**

P.J. Plauger moves to adjourn, Hedquist seconds. Motion passes by unanimous consent.

The meeting adjourns at 09:57 (UTC-10) Friday 19 August 2011.

# Attendance

Company/Organization	NB	Representative	Mon	Tue	Wed	Thu	Fri	Sat
Apple		Howard E. Hinnant	V	V	V	V	V	
Apple		Doug Gregor	A	A	A	A	A	
Bloomberg		John Lakos	V	V	V	V	V	
Bloomberg		Alisdair Meredith	A	A	A	A	A	
Bloomberg		Dietmar Kühl	A	A	A	A	A	
BoostPro Computing		David Abrahams	V	V	V	V	V	
BoostPro Computing		John Wiegley	A	A	A	A	A	
Carnegie Mellon University		David Svoboda	V	V	V	V	V	
Cisco Systems		Martin Sebor	V	V	V	V	V	
Dawes		Beman G. Dawes	A	A	A	A		
Dinkumware		P. J. Plauger	V	V	V	V	V	
Dinkumware		Tana Plauger	A	A		A	A	
DRW Holdings		Nevin Liber	V	V	V	V	V	
Edison Design Group		J. Stephen Adamczyk	V	V	V	V	V	
Edison Design Group		Jens Maurer	A	A	A	A	A	
Edison Design Group		William M. Miller	A	A	A	A	A	
Edison Design Group		John H. Spicer	A	A	A	A	A	
Edison Design Group		Daveed Vandevoorde	V	V	V	V	V	
Embarcadero Technologies		Dawn Perchik	V	V	V	V	V	
Fermi Nat. Accelerator Lab		Walter E. Brown	V	V	V	V	V	
Fujitsu Laboratories of America		Maarten Wiggers	V	V	V	V		
Gimpel Software		James Widman	V	V	V	V	V	
Google		Lawrence Crowl	V	V	V	V	V	
Google		Matthew Austern	A	A	A	A	A	
Google	JL	JC van Winkel	A	A	A	A	A	
Google		James Dennett	A	A	A	A	A	

<b>Company/Organization</b>	<b>NB</b>	<b>Representative</b>	<b>Mon</b>	<b>Tue</b>	<b>Wed</b>	<b>Thu</b>	<b>Fri</b>	<b>Sat</b>
Google		Dean Michael Berris	A	A	A	A	A	
Google		Chandler Carruth	A	A	A	A	A	
Google		Richard Smith	A	A	A	A	A	
Google		Jeffrey Yasskin	A	A	A	A	A	
Hewlett-Packard Development		Hans Boehm	V	V	V	V	V	
IBM	CA	Michael Wong	V	V	V	V	V	
IBM		Nikhil Joshi		A	A	A		
Indiana University		Jeremiah Willcock	V	V	V	V		
Intel		Clark Nelson	V	V	V	V	V	
Intel		Pablo Halpern	A	A	A	A	A	
Intel	CA	Stefanus Du Toit	A	A	A	A	A	
Intel		Tatiana Shpeisman		A	A			
Intel		Justin Gottschlich		A	A			
Intel		Robert Geva	A	A	A	A		
Microsoft		Herb Sutter	A	A	A	A	A	
Microsoft		Niklas Gustafsson	A	A	A			
Microsoft		Jonathan Caves	V	V	V	V	V	
Microsoft		Stephan Lavavej	A	A	A	A	A	
NVidia		Vinod Grover	V	V	V	V	V	
NVidia		Olivier Giroux	A	A	A	A	A	
Oracle		Stephen D. Clamage	V	V	V	V	V	
Perennial	US	Barry Hedquist			V	V	V	
Plum Hall		Thomas Plum	V	V	V	V	V	
Programming Research Group		Richard Corden	V	V	V	V	V	
Programming Research Group		Christof Meerwald	V	V	V	V	V	
Red Hat		Jason Merrill	V	V	V	V	V	
Red Hat		Benjamin Kosnik	A	A	A	A	A	
Riverbed Technology		Kyle Kloepper	V	V	V	V	V	

<b>Company/Organization</b>	<b>NB</b>	<b>Representative</b>	<b>Mon</b>	<b>Tue</b>	<b>Wed</b>	<b>Thu</b>	<b>Fri</b>	<b>Sat</b>
Riverbed Technology		Neal Meyer	A	A	A	A	A	
Roundhouse Consulting		Pete Becker	V	V	V	V	V	
Seymour		Bill Seymour	V	V	V	V	V	
Symantec		Mike Spertus	V	V	V	V		
Texas A&M University		Bjarne Stroustrup	V	V	V	V	V	
Texas A&M University		Andrew Sutton	A	A	A	A		
<b>PL22.16 Non-members</b>								
HSR	CH	Peter Sommerlad	N	N	N	N	N	
LTK Engineering		Alan Talbot	N	N	N	N	N	
University Carlos III	ES	J. Daniel Garcia	N	N	N	N	N	
University of Nice	FR	Jean-Paul Rigault	N	N	N	N	N	
Vollmann Engineering	CH	Detlef Vollmann	N	N	N	N	N	
	FI	Ville Voutilainen	N	N	N	N	N	
	UK	Roger Orr	N	N	N	N	N	
		Faisal Vali	N	N	N			
		Saeed Amrollahi Boyouki	N	N	N	N	N	
Qualcomm		Marshall Clow	N	N	N	N	N	
Irdeto		Mick Stoughton	N	N	N	N	N	