

Doc No: SC22/WG21/N3455  
PL22.16/12-0145  
Date: 2012-11-3  
Project: JTC1.22.32  
Reply to: Kyle Kloepper  
Riverbed Technology  
Kyle.Kloepper@riverbed.com

# Minutes

PL22.16 Meeting No. 59  
15-19 October 2012 Portland, Oregon, USA

## 1. Opening activities

Clamage opened the meeting and welcomed the newcomers.

### 1.1 Opening comments, welcome from host

Tom Plum welcomes the attendees and provides organizational information.

### 1.2 Introductions

Clamage has the attendees briefly introduce themselves.

### 1.3 Meeting guidelines (Anti-Trust)

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

Clamage presented the anti-trust links and clarified that he is not allowed to explain the anti-trust documents nor answer questions on them.

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

Nelson explained the membership and voting rights and clarified that the rights apply to formal votes but not to straw polls taken.

### 1.5 Agenda review and approval

Clamage entertained a motion to approve the agenda (document PL22.16/12-0063 = WG21/N3373), moved by Clow, seconded by Liber. Unanimous.

## **1.6 Approval of the minutes of the previous meeting**

Moved by Nelson, seconded by Hedquist, unanimous.

## **1.7 Editor's report, approval of draft**

Du Toit summarized the editor's report, saying that there were 50 core issues and two dozen library issue resolutions added to the working draft.

Draft approval moved by Du Toit, seconded by Halpern, unanimous.

## **1.8 Liaison reports (including WG21 study groups)**

Sutter reports on SC22 status

Sutter then introduced isocpp.org.

Plum then made a short report about the C committee.

For WG23 (security/vulnerabilities), Plum reported.

## **1.9 WG progress reports and work plans for the week**

### **Progress Reports**

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

### **Core Working Group (CWG)**

Miller gave the status report for Core.

### **Library Working Group (LWG)**

Meredith gave the status report for LWG

### **Evolution Working Group (EWG)**

Stroustrup then gave his report

## **SG1**

Boehm summarized the SG1 status.

## **SG2**

Gregor briefly reported that the modules study group has been mostly dormant.

## **SG3**

Dawes said that filesystem is progressing nicely.

## **SG4**

Gustafsson covered for Kloepper for SG4.

## **SG5**

Wong said that SG5 (transactional memory) is aiming for a TS shipping alongside approximately 2014.

## **SG6**

Crowl said that SG6 (numerics) has a handful of papers to look at.

## **1.10 New business requiring actions by the committee**

### **2. Organize subgroups, establish working procedures.**

Clamage give room information.

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

The committee broke into the working groups and study groups.

**Tuesday 16 October 8:30 a.m. – 5:30 p.m.**

### **4. WG sessions continue.**

## **Wednesday 17 October 8:30 a.m. - 5:30 p.m.**

**5. WG sessions continue.**

## **Thursday 18 October 8:00 a.m. - 12:00 p.m.**

**6. WG sessions continue.**

## **Thursday 18 October 1:30 p.m. – 5:30 p.m.**

**7. General session.**

**7.1 WG status and progress reports.**

Clamage explained the purpose of the meeting to newcomers, which is to save time on Friday.

### **Core Working Group**

Miller presented his Core Report.

### **Library Working Group**

Meredith presented his Library report.

### **Evolution Working Group**

Stroustrup presented EWG status, and announced two new study groups, for reflection (SG7) and concepts (SG8).

### **PL 22.16**

Hedquist presented the PL22.16 resolutions and motions.

Miller asked what exactly it means that the library TR is used but still being withdrawn, and Plauger and Hedquist explained that the technical content of it is still being used.

Withdraw TR1, confirm Performance TR: Unanimous

Member emeritus status: Unanimous.

Approval of the delegation: Unanimous.

#### **SG4**

Gustafsson presented SG4 (Networking) status.

#### **SG3**

Dawes presented SG3 status.

#### **SG1**

Boehm presented (Concurrency) SG1 status.

#### **SG5**

Wong presented SG5 (Transactional memory) status.

#### **SG2**

Gregor presented SG2 (Modules).

#### **SG6**

Crowl presented SG6 (Numerics).

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

Sutter gave a brief presentation about subgroups and ISO stages.

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

**Friday 19 October 8:30 a.m. – 12:00 p.m.**

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

**Friday 19 October 1:30 p.m. – 5:30 p.m.**

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

Clamage calls the meeting to order. Roll call shows 22 PL22.16 and 7 WG21 voting members present.

### **10.1 Motions**

#### **Core motions**

##### **Motion 1**

Move we accept as Defect Reports all issues in "DR" status from N3383:

moved by Miller, seconded by Hedquist

.16 unanimous, wg21 unanimous

##### **Motion 2**

Move we apply N3323, "A Proposal to Tweak Certain C++ Contextual Conversions, v3," to the C++ Working Paper.

moved by Miller, seconded by Wong

.16 unanimous, wg21 unanimous

##### **Motion 3**

Move we accept as Defect Reports all issues in "ready" status from N3382, except for issues 129, 240, 240, 312, 1013, 1328 and 1417, and apply their proposed resolutions to the C++ Working Paper:

moved by Miller, seconded by Smith

Miller clarified that 1328 has been removed from the motion, and it will be moved in Bristol

.16 unanimous, wg21 unanimous

#### **Library motions**

##### **Motion 1**

Move we apply the resolutions of all issues in "Ready" and "Tentatively Ready" status from N3438 to the C++ Working Paper.

moved by Meredith, seconded by Clow

.16 unanimous, wg21 unanimous

## **Motion 2**

Move we apply N3421, Making Operator Functors greater<>, to the C++ Working Paper.

moved by Meredith, seconded by Clow

.16 unanimous wg21 5-1-1 (favor-against-abstain)

## **Motion 3**

Move we apply N3462, std::result\_of and SFINAE, to the C++ Working Paper.

moved by Meredith, seconded by Hinnant

.16 unanimous wg21 5-1-1 (favor-against-abstain)

## **Motion 4**

Move we apply the following papers, applying constexpr in the standard library, to the C++ Working Paper.

moved by Meredith, seconded by Clow

.16 unanimous wg21 6-0-1 (favor-against-abstain)

## **PL22.16**

### **RESOLUTION #1:**

PL22.16, the US TAG to SC22/WG21, APPROVES the following recommended answers to the Systematic Review Questions for TR 19768:2007 and TR 18015:2006.

ISO/IEC TR 19768:2007, Extensions to the C++ Library

1. Recommended action?

Withdraw

Comment:

TR 19768:2007 has been incorporated into two separate ISO/IEC Standards.

TR 19768:2007, Section 5.2, Mathematical Special Functions was adopted as ISO/IEC 29124:2010, Extensions to the C++ Library to Support Mathematical Special Functions.

The remaining Sections of TR 19768 were incorporated into ISO/IEC 14882:2011, Programming Language C++.

2. Has this International Standard been adopted or is it intended to be adopted in the future as a national standard or other publication?

NO

3. Is the national publication identical to the International Standard or was it modified?

N/A

4. Is this International Standard used in your country without national adoption or are products used in your country based on this standard?

YES

5. Is this International Standard, or its national adoption, referenced in regulations in your country?

NO

ISO/IEC TR 18015:2006, Technical Report on C++ Performance

1. Recommended action?

Confirm

2. Has this International Standard been adopted or is it intended to be adopted in the future as a national standard or other publication?

NO

3. Is the national publication identical to the International Standard or was it modified?

N/A

4. Is this International Standard used in your country without national adoption or are products used in your country based on this standard?

YES

5. Is this International Standard, or its national adoption, referenced in regulations in your country?

NO

**MOTION #1: PL22.16 APPROVES RESOLUTION #1 AS STATED ABOVE. (Hedquist/Clow)**

Roll Call Vote: (22-0-0-7)

Apple -	Yes
Bloomberg LLC -	Yes
BoostPro -	Yes
CERT Coordination Center -	Absent
Cisco Systems Inc -	Absent
DRW Holding LLC -	Yes
Dinkumware Ltd -	Yes
Edison Design Group -	Yes
Embarcadero Technologies -	Absent
Fermi National Accelerator Laboratory	Absent
Fujitsu Laboratories of America -	Absent
Gimpel Software -	Yes
Google -	Yes
Hewlett-Packard Company -	Yes
IAR Systems AB - Advisory -	Absent
IBM Corporation -	Yes
Indiana University -	Yes
Intel Corporation -	Yes
Microsoft Corporation -	Yes
NVidia Corporation -	Yes
Oracle -	Yes
Perennial -	Yes
Plum Hall Inc -	Yes
Red Hat -	Yes



Riverbed Technology -	Absent
Roundhouse Consulting Ltd -	Yes
Seymour -	Yes
Symantec -	Yes
Texas A&M University -	Yes

## **RESOLUTION #2 - Member Emeritus Status**

PL 22.16 NOMINATES MR. BEMAN DAWES AND DR. WALTER BROWN FOR APPOINTMENT AS EMERITUS MEMBERS TO PL22.16.

### Criteria

1. Ten years or longer as a member of PL22.16.
2. Dates of Membership/Last Organization(s) represented.
3. History of Contributions to the Committee
4. Retirement from the ICT Industry - date.

### **Beman Dawes**

Beman Dawes was a member of PL22.16 during the period 1992 to 2010, representing himself (DAWES). During this period Mr. Dawes made immeasurable and significant contributions to the development of 1998, 2003, and 2011 ISO/IEC Standards for the Computer Programming Language C++; 2006 ISO/IEC Technical Report on C++ Performance; and the 2007 ISO/IEC Technical Report on Extensions to the C++ Library. Mr. Dawes also served as Chairman of the SC22/WG21 Library Working Group. Mr. Dawes retired in 2010. PL22.16 wishes to continue to benefit from Mr. Dawes's considerable talents and expertise in carrying out its ongoing program of work, and recommends he be appointed Emeritus Member status.

### **Dr. Walter E Brown**

Dr. Walter E Brown has been a member of PL22.16, representing Fermi National Accelerator Laboratory, from 2000-2012. During that period, Dr. Brown made numerous and significant contributions in the development of the 2003, and 2011 ISO/IEC Standards for the Computer Programming Language C++; 2009 ISO/IEC 29124, Programming Language C++ Mathematical Special Functions; 2007 Technical Report on Extensions to the C++ Library. Dr. Brown is the Project Editor for ISO/IEC 29124, Programming Language C++ - Mathematical Special Functions and served as a member of the US Delegation to JTC1 SC22/WG21. Dr. Brown retired from Fermi National Accelerator Laboratory in March 2012. PL22.16 wishes to continue to benefit from Dr. Brown's considerable talents and expertise in carrying out its ongoing program of work, and recommends he be appointed Emeritus Member status.

### **MOTION #2:**

PL22.16 APPROVES RESOLUTION #2 AS STATED ABOVE. (Hedquist/Stroustrup)

## **RESULTS: APPROVED - UNANIMOUS**

### **MOTION #3**

PL22.16 designates the following voting members of PL22.16 as the US delegation to JTC1 SC22/WG21 for any and all WG21 meetings and teleconferences for calendar year 2013. (Hedquist/Liber)

Barry Hedquist - Perennial  
William 'Mike' Miller – Edison Design Group  
Howard Hinnant – Apple Computer  
Steve Clamage - Oracle  
Lawrence Cowl - Google  
Thomas Plum – Plum Hall, Inc.  
Bjarne Stroustrup – Texas A&M  
Clark Nelson - Intel

## **RESULT: APPROVED - UNANIMOUS**

### **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 presented the future meetings, noting that Bristol will be a six-day meeting. Liber said Chicago will be last week of september or first week of october. Sutter stated that two meetings per year has benefits, we never have to worry whether ballots fit, and there's some room for study group meetings. Kühl reminded that ACCU is before the Bristol meeting in Bristol. Orr said that the reservation website should be the same for ACCU and the WG21 meeting, and said that it should be possible to do a single booking. Talbot asked whether it would be a good idea to push back the meeting in Chicago, to have a more balanced distribution of meetings during a year, and thought that it's better to sit indoors during bad weather than during good weather.

Meredith recommended SG chairs to cooperate with Sutter if they need face-to-face meetings.

### **11.2 Mailings**

Nelson reviewed the following mailing deadlines:

- Post-Portland: 2 November 2012

- Pre-Bristol: 15 March 2013

## **12. Adjournment**

Becker moved to thank the host. Seconded by the whole committee, unanimous approval.

Clamage entertained a motion to adjourn.

Moved by Clow, seconded by Hedquist. Unanimous.

# Attendance

<b>Company/Organization</b>	<b>NB</b>	<b>Representative</b>	<b>Mo</b>	<b>Tu</b>	<b>We</b>	<b>Th</b>	<b>Fr</b>	<b>Sa</b>
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		Eric Niebler	A	A	A	A	A	
BoostPro Computing		John Wiegley	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		Jens Maurer	A	A	A	A	A	
Edison Design Group		William M. Miller	A	A	A	A	A	
Edison Design Group		John H. Spicer	V	V	V	V	V	
Edison Design Group		Daveed Vandevoorde	A	A	A	A	A	
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		James Dennett	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		Paul E. McKenney	A	A				
IBM		Maged Michael		A	A	A		
Indiana University		Jeremiah Willcock	V	V	V	V	V	
Indiana University		Larisse Voufo	A	A	A	A	A	
Intel		Clark Nelson	V	V	V	V	V	

<b>Company/Organization</b>	<b>NB</b>	<b>Representative</b>	<b>Mo</b>	<b>Tu</b>	<b>We</b>	<b>Th</b>	<b>Fr</b>	<b>Sa</b>
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	A		
Intel		Robert Geva			A	A	A	
Intel		Marius Cornea			A			
Microsoft		Jonathan Caves	V	V	V	V		
Microsoft		Herb Sutter	A	A	A	A	A	
Microsoft		Artur Laksberg	A	A	A	A		
Microsoft		Niklas Gustafsson	A	A	A	A		
Microsoft		Stephan Lavavej	A	A	A	A	A	
Louisiana State University		Hartmut Kaiser	A	A	A			
NVidia		Vinod Grover	V	V	V	V		
NVidia		Olivier Giroux	A	A	A	A	A	
NVidia		Jaydeep Marathe	A	A	A			
NVidia		Jared Hoberock	A	A	A	A		
Oracle		Stephen D. Clamage	V	V	V	V	V	
Oracle		Mark Moir		A	A	A		
Perennial	US	Barry Hedquist	V	V	V	V	V	
Plum Hall		Thomas Plum	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	
Roundhouse Consulting		Pete Becker	V	V	V	V	V	
Seymour		Bill Seymour	V	V	V	V	V	
Symantec		Mike Spertus	V	V	V	V	V	
Texas A&M University		Bjarne Stroustrup	V	V	V	V	V	
<b>PL22.16 Non-members</b>								
HSR	CH	Peter Sommerlad	N	N	N	N		
Basho Technologies		Jesse Williamson	N	N	N	N	N	
CERN	CH	Axel Naumann	N	N	N	N	N	

<b>Company/Organization</b>	<b>NB</b>	<b>Representative</b>	<b>Mo</b>	<b>Tu</b>	<b>We</b>	<b>Th</b>	<b>Fr</b>	<b>Sa</b>
Electro Scientific		Scott Schurr	N	N	N	N	N	
LTK Engineering		Alan Talbot	N	N	N	N	N	
Integrable Solutions	FR	Gabriel Dos Reis	N	N	N	N	N	
University Carlos III	ES	J. Daniel Garcia	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	N	N	
		Beman G. Dawes	N	N	N	N		
		Walter E. Brown	N	N	N	N		
		Robert Klarer	N	N	N		N	
MIT		Charles E. Leiserson	N	N	N	N		
Qualcomm		Marshall Clow	N	N	N	N	N	
Research in Motion		Tony Van Eerd	N	N	N	N	N	
POCO		Aleksandar Fabijanic	N	N	N	N	N	
		Mike Winterberg		N	N	N		