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Reply to: Kyle Kloepper (Kyle.Kloepper@riverbed.com)

# Minutes (February 2014)

PL22.16 Meeting No. 62  
10-15 February 2014 – Issaquah, Washington, USA

## 1 Opening activities

Clark Nelson calls the meeting to order on Monday 10 February 2014 at 9:06 a.m. PST (17:06 UTC).

### 1.1 Opening comments, welcome from host

### 1.2 Introductions

### 1.3 Meeting guidelines (Patent and Anti-Trust)

Nelson directs group to the following websites without further comment:

- <http://www.incits.org/standards-information/legal-info>
- <http://www.incits.org/dotAsset/63b6e457-53b9-4933-9835-7c74e77ca2fd.pdf>
- [http://www.iso.org/iso/codes\\_of\\_conduct.pdf](http://www.iso.org/iso/codes_of_conduct.pdf)

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

Nelson explains attendance and voting procedure.

### 1.5 Agenda review and approval

Motion: to accept agenda in N3799.

Unanimous consent.

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

Motion: to accept minutes from previous meeting (N3768 and N3769).

Unanimous consent.

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

Sutter introduces and explains working drafts being tracked by [isocpp.org/std/status](http://isocpp.org/std/status).

Motion: to accept N3797 as the working draft for Programming Language C++.

Moved by: Brown

Seconded by: Clow

Unanimous consent.

Motion: to accept N3790 as the working draft for File Systems TS.  
Moved by: Orr  
Seconded by: Carruth

Unanimous consent.

Motion: to accept N3848 as the working draft for Library Fundamentals TS.  
Moved by: Yasskin  
Seconded by: Meredith

Unanimous consent.

Motion: to accept N3820 as the working draft for Arrays TS.  
Moved by: Carruth  
Seconded by: Clow

Unanimous consent.

## 1.8 Liaison reports (including WG21 study groups)

SC22 report:

Sutter reports.

SC22/WG14 (C) report:

Plum reports.

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

Each working group presents reports.

## 1.10 New business requiring actions by the committee

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

2 Organize Working Groups and Study Groups, establish working procedures

3 WG and SG sessions

Monday 10 February 2014 until 17:30

4 WG and SG sessions continue

Tuesday 11 February 2014 8:30 – 17:30

5 WG and SG sessions continue

Wednesday 12 February 2014 8:30 – 17:30

6 WG and SG sessions continue

Thursday 13 February 2014 8:30 – 17:30

7 WG and SG sessions continue

Friday 14 February 2014 8:30 – 12:00

8 General session

Friday 14 February 2014 13:30 – 17:30

8.1 WG and SG status and progress reports

Core working group (CWG):

Miller presents CWG report.

CWG motion 1 passes with unanimous consent.

CWG motion 2 passes with unanimous consent.

CWG motion 3 passes with unanimous consent.

CWG motion 4 passes with unanimous consent.

CWG motion 5 passes with unanimous consent.

CWG motion 6 passes with unanimous consent.

CWG motion 7 passes with unanimous consent.

Evolution working group (EWG):

Stroustrup give EWG report.

Library working group (LWG):

Meredith gives LWG report.

LWG motion 1 passes with unanimous consent.

LWG motion 2 passes with unanimous consent.

LWG motion 3 passes with unanimous consent.

LWG motion 4 passes with unanimous consent.

LWG motion 5 passes with unanimous consent.

LWG motion 6 passes with unanimous consent.

Straw poll: LWG motion 7

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	6	0	1

LWG motion 7 passes.

LWG motion 8 passes with unanimous consent.

LWG motion 9 passes with unanimous consent.

Straw poll: LWG motion 10

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	18	0	6
WG21	5	0	2

LWG motion 10 passes.

LWG motion 11 passes with unanimous consent.

LWG motion 12 passes with unanimous consent.

LWG motion 13 passes with unanimous consent.

Straw poll: LWG motion 14

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	6	0	1

LWG motion 14 passes.

LWG motion 15 passes with unanimous consent.

LWG motion 16 passes with unanimous consent.

LWG motion 17 passes with unanimous consent.

LWG motion 18 passes with unanimous consent.

LWG motion 19 passes with unanimous consent.

LWG motion 20 passes with unanimous consent.

LWG motion 21 passes with unanimous consent.

Straw poll: LWG motion 22

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	15	0	4
WG21	5	0	2

LWG motion 22 passes.

Library Evolution working group (LEWG):

Yasskin presents LEWG report.

Study group 1 – Concurrency (SG1):

Boehm presents SG1 report.

Straw poll: SG1 motion 1

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	17	0	7
WG21	6	0	1

SG1 motion 1 passes.

SG1 motion 2 passes with unanimous consent.

SG1 motion 3 passes with unanimous consent.

SG1 motion 4 passes with unanimous consent.

SG1 motion 5 passes with unanimous consent.

Study group 2 – Modules (SG2):

Group did not meet.

Study group 3 – File System (SG3):

Nothing more to report.

Study group 4 – Networking (SG4):

Kloepper reports.

Study group 5 – Transactional Memory (SG5):

Wong reports.

SG5 motion 1 passes with unanimous consent.

Sutter directs the room to [isocpp.org/std/status](http://isocpp.org/std/status). He notes that for future TS creation the initial working draft should be present at the same time that the TS work item is requested.

Study group 6 – Numerics (SG6):

Crowl presents SG6 report.

Study group 7 – Reflection (SG7):

Carruth reports.

Study group 8 – Concepts (SG8):

Nothing further to report.

Study group 9 – Ranges (SG9):

Clow has nothing further to report.

Study group 10 – Feature Test (SG10):

Nelson reports.

Study group 12 – Undefined and Unspecified Behavior (SG12):

Dos Reis reports group did not meet.

Study group 13 – Graphics (SG13):

Sutter reports group met for two hours and group gave good feedback to author of N3888.

WG21:

WG21 motion 1 passes with unanimous consent.

8.2 Presentation and discussion of proposals. Straw votes taken.

9 WG and SG sessions continue

10 WG and SG sessions continue

Saturday 15 February 2014 8:30 – 12:00

11 Review of the meeting

Saturday 15 February 2014 13:30 – 17:30

Summary of motion results:

<u>Core</u>	<u>result</u>
CWG 1	carried
CWG 2	carried
CWG 3	carried
CWG 4	carried
CWG 5	carried
CWG 6	carried
CWG 7	carried

### Library

LWG 1 carried  
LWG 2 carried  
LWG 3 carried  
LWG 4 carried  
LWG 5 carried  
LWG 6 carried  
LWG 7 carried  
LWG 8 carried  
LWG 9 carried  
LWG 10 carried  
LWG 11 carried  
LWG 12 carried  
LWG 13 carried  
LWG 14 carried  
LWG 15 carried  
LWG 16 carried  
LWG 17 carried  
LWG 18 carried  
LWG 19 carried  
LWG 20 carried  
LWG 21 carried  
LWG 22 carried

### Concurrency

SG1 1 carried  
SG1 2 carried  
SG1 3 carried  
SG1 4 carried  
SG1 5 carried

### Transactional Memory

SG5 1 carried

### WG21

WG21 1 carried

## 11.1 WG21 motions

Core motions:

CWG motion 1: Move we accept as Defect Reports the following issues in "ready" status from [N3833](#) and apply their proposed resolutions to the C++ working paper:

[1344](#) [1376](#) [1493](#) [1579](#) [1604](#) [1607](#) [1612](#) [1613](#) [1662](#) [1664](#) [1690](#) [1691](#) [1692](#) [1740](#)  
[1741](#) [1762](#) [1764](#) [1765](#) [1767](#) [1770](#) [1772](#) [1773](#) [1775](#)

Moved by: Miller

Seconded by: Nelson

yes no abstain  
PL 22.16 unanimous consent  
WG21 unanimous consent

CWG motion 2: Move we accept as Defect Reports the following issues in "tentatively ready" status from [N3833](#) and apply their proposed resolutions to the C++ working paper:

[1598](#) [1611](#) [1629](#) [1658](#) [1660](#) [1666](#) [1687](#) [1689](#) [1693](#) [1707](#) [1716](#) [1732](#) [1737](#) [1738](#)  
[1739](#) [1746](#) [1747](#) [1769](#)

Moved by: Miller

Seconded by: Orr

yes no abstain  
PL 22.16 unanimous consent  
WG21 unanimous consent

CWG motion 3: Move we apply the proposed resolutions of the following issues in "ready" status from [N3833](#) to the C++ working paper:

[1681](#) [1717](#) [1760](#)

Moved by: Miller

Seconded by: Meredith

yes no abstain  
PL 22.16 unanimous consent  
WG21 unanimous consent

CWG motion 4: Move we apply the proposed resolutions of the following issues in "tentatively ready" status from [N3833](#) to the C++ working paper:

[1674](#) [1669](#) [1684](#)

Moved by: Miller

Seconded by: Merrill

yes no abstain  
PL 22.16 unanimous consent  
WG21 unanimous consent



CWG motion 5: Move we apply the proposed resolution of [issue 1778](#) from [N3833](#) to the C++ working paper.

Moved by: Miller

Seconded by: Hedquist

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

CWG motion 6: Move we apply [N3914](#), "Additional Core Language Issue Resolutions," to the C++ working paper.

Moved by: Miller

Seconded by: Smith

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

CWG motion 7: Move to direct the project editor for the Concepts Lite Technical Specification to produce an initial working paper based on [N3929](#) and incorporating modifications suggested by the review at this meeting.

Moved by: Miller

Seconded by: van Winkel

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

Library motions:

LWG motion 1: Move we apply the resolutions of the following issues in "Ready" status from [N3754](#) to the C++ Working Paper:

[LWG2135](#) (Unclear requirement for exceptions thrown in `condition_variable::wait()`)

[LWG2141](#) ( `std::hash` is vulnerable to collision [DoS](#) attack)

[LWG2142](#) ( `packaged_task::operator()` synchronization too broad?)

[LWG2240](#) (Probable misuse of term "function scope" in `[thread.condition]`)

[LWG2252](#) (Strong guarantee on `vector::push_back()` still broken with C++11?)

[LWG2257](#) (Simplify container requirements with the new algorithms)

[LWG2268](#) (Setting a default argument in the declaration of a member function assign of `std::basic_string`)  
[LWG2271](#) ( `regex_traits::lookup_classname` specification unclear)  
[LWG2272](#) ( quoted should use `char_traits::eq` for character comparison)  
[LWG2278](#) (User-defined literals for Standard Library types)  
[LWG2280](#) ( `begin / end` for arrays should be `constexpr` and `noexcept`)  
[LWG2285](#) ( `make_reverse_iterator`)  
Moved by: Meredith  
Seconded by: Dennett

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 2: **NB comment ES 16**  
Move we apply the resolutions of the following issues in document [N3930](#) to the C++ Working Paper:  
[LWG 2299](#) Effects of inaccessible `key_compare::is_transparent` type are not clear  
Moved by: Meredith  
Seconded by: Halpern

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 3: Move we apply the resolutions of the following issues in document [N3930](#) to the C++ Working Paper:  
[LWG 1450](#) Contradiction in `regex_constants`  
[LWG 2003](#) String exception inconsistency in `erase`.  
[LWG 2112](#) User-defined classes that cannot be derived from  
[LWG 2132](#) `std::function` ambiguity  
[LWG 2182](#) `Container::[const_]reference` types are misleadingly specified  
[LWG 2188](#) Reverse iterator does not fully support targets that overload `operator&`  
[LWG 2193](#) Default constructors for standard library containers are explicit  
[LWG 2205](#) Problematic postconditions of `regex_match` and `regex_search`  
[LWG 2213](#) Return value of `std::regex_replace`  
Moved by: Meredith  
Seconded by: Nishanov

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	

LWG motion 4: Move we apply the resolutions of the following issues in document [N3930](#) to the C++ Working Paper:

[LWG 2258](#) `a.erase(q1, q2)` unable to directly return `q2`

[LWG 2263](#) Comparing iterators and allocator pointers with different `const-character`

[LWG 2293](#) Wrong facet used by `num_put::do_put`

[LWG 2301](#) Why is `std::tie` not `constexpr`?

[LWG 2304](#) Complexity of `count` in unordered associative containers

[LWG 2306](#) `match_results::reference` should be `value_type&`, not `const value_type&`

[LWG 2308](#) Clarify container destructor requirements w.r.t. `std::array`

[LWG 2313](#) `tuple_size` should always derive from `integral_constant`

[LWG 2314](#) `apply()` should return `decltype(auto)` and use `decay_t` before `tuple_size`

[LWG 2315](#) `weak_ptr` should be movable

[LWG 2316](#) `weak_ptr::lock()` should be atomic

[LWG 2317](#) The type property queries should be [UnaryTypeTraits](#) returning `size_t`

[LWG 2320](#) `select_on_container_copy_construction()` takes allocators, not containers

[LWG 2322](#) `Associative(initializer_list, stuff)` constructors are underspecified

[LWG 2323](#) `vector::resize(n, t)`'s specification should be simplified

[LWG 2324](#) Insert iterator constructors should use `addressof()`

[LWG 2329](#) `regex_match()/regex_search()` with `match_results` should forbid temporary strings

[LWG 2330](#) `regex("meow", regex::icase)` is technically forbidden but should be permitted

[LWG 2332](#) `regex_iterator/regex_token_iterator` should forbid temporary regexes

[LWG 2339](#) Wording issue in `nth_element`

[LWG 2341](#) Inconsistency between `basic_ostream::seekp(pos)` and `basic_ostream::seekp(off, dir)`

[LWG 2344](#) `quoted()`'s interaction with padding is unclear

[LWG 2346](#) `integral_constant`'s member functions should be marked `noexcept`

[LWG 2350](#) `min`, `max`, and `minmax` should be `constexpr`

[LWG 2356](#) Stability of erasure in unordered associative containers

[LWG 2357](#) Remaining "Assignable" requirement

[LWG 2359](#) How does `regex_constants::nosubs` affect `basic_regex::mark_count()`?

[LWG 2360](#) `reverse_iterator::operator*` is unimplementable

Moved by: Meredith

Seconded by: Halpern

yes    no    abstain

PL 22.16 unanimous consent  
WG21 unanimous consent

LWG motion 5: **NB comment US 21**

Move we apply to the Working Paper the Proposed Wording from [N3924](#),  
"Discouraging rand() in C++14"

Moved by: Meredith

Seconded by: Halpern

yes no abstain

PL 22.16 unanimous consent  
WG21 unanimous consent

LWG motion 6: Move we apply to the Working Paper the Proposed Wording  
from [N3887](#), "Consistent Metafunction Aliases"

Moved by: Meredith

Seconded by: Halpern

yes no abstain

PL 22.16 unanimous consent  
WG21 unanimous consent

LWG motion 7: Move we apply the resolutions of the following issues in  
document [N3931](#) to the Filesystem TS Working Paper:

[SG3 2](#) Tighten specification when there is no reasonable behavior

[SG3 3](#) Filename length needs bullet item

[SG3 6](#) Path depth is underspecified

[SG3 7](#) Unhelpful comment for struct space\_info

[SG3 8](#) file\_time\_type underspecified

[SG3 9](#) Unclear why range-based-for functions return different types

[SG3 14](#) Incorrect postconditions for path copy/move constructor

[SG3 15](#) Missing behavior for characters with no representation

[SG3 16](#) Append behavior underspecified if target is empty

[SG3 18](#) is\_absolute() return clause confusing

[SG3 19](#) Consider using quoted manipulators

[SG3 21](#) directory\_entry operator== needs clarification

[SG3 24](#) Incorrect effects clause for path copy

[SG3 29](#) Unclear semantics of read\_symlink on error

[SG3 32](#) system\_complete() example needs clarification

[SG3 33](#) unique\_path() is a security vulnerability

[SG3 44](#) enum classes copy\_options and perms should be bitmask types

[SG3 47](#) `last_write_time()` uses ill-formed cast  
[SG3 50](#) `path::compare(const string& s)` wrong argument type  
[SG3 52](#) Better to avoid deriving from `std::iterator`  
[SG3 55](#) Clarify Error reporting  
Moved by: Meredith  
Seconded by: Orr

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 8: Move we apply to the Library Fundamentals TS Working Paper the Proposed Wording from [N3921](#) `string_view` library  
Moved by: Meredith  
Seconded by: Halpern

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 9: Move we apply to the Library Fundamentals TS Working Paper the Proposed Wording from [N3804](#) any library  
Moved by: Meredith  
Seconded by: Seymour

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 10: Move we apply to the Library Fundamentals TS Working Paper the Proposed Wording from [N3916](#), "Polymorphic Memory Resources"  
Moved by: Meredith  
Seconded by: Halpern

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	12	0	7
WG21	6	0	1

LWG motion 11: Move we apply to the Library Fundamentals TS Working Paper the Proposed Wording from [N3905](#) Faster string searching (Boyer-Moore et al.)

Moved by: Meredith

Seconded by: Orr

yes no abstain

PL 22.16 unanimous consent

WG21 unanimous consent

LWG motion 12: Move we apply to the Library Fundamentals TS Working Paper the Proposed Wording from [N3925](#) A sample proposal (data sampling, real proposal!)

Moved by: Meredith

Seconded by: van Winkel

yes no abstain

PL 22.16 unanimous consent

WG21 unanimous consent

LWG motion 13: Move we apply to the Library Fundamentals TS Working Paper the Proposed Wording from [N3932](#) Variable Templates For Type Traits

Moved by: Meredith

Seconded by: Halpern

yes no abstain

PL 22.16 unanimous consent

WG21 unanimous consent

LWG motion 14: Move we apply to the Library Fundamentals TS Working Paper the Proposed Wording from [N3915](#), "make apply normative"

Moved by: Meredith

Seconded by: Garcia

yes no abstain

PL 22.16 unanimous consent

WG21 unanimous consent

LWG motion 15: Move we apply to the Library Fundamentals TS Working Paper the Proposed Wording from [N3923](#) A SFINAE-Friendly `std::iterator_traits`  
Moved by: Meredith  
Seconded by: Halpern

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 16: Move we apply to the Library Fundamentals TS Working Paper option 2 of the Proposed Wording from [N3843](#) A SFINAE-Friendly `std::common_type`  
Moved by: Meredith  
Seconded by: Halpern

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 17: Move we apply to the Library Fundamentals TS Working Paper the Proposed Wording from [N3920](#) Extending `shared_ptr` to Support Arrays  
Moved by: Meredith  
Seconded by: Halpern

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 18: Move we apply to the Library Fundamentals TS Working Paper the Proposed Wording from [N3783](#), "Network Byte Order Conversion."  
Moved by: Meredith  
Seconded by: Orr

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 19: Move we apply to the Library Fundamentals TS Working Paper the amendments recommended by [N3793](#), "Proposal to add a utility class to represent optional objects (Revision 5)"

Moved by: Meredith

Seconded by: Halpern

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 20: Move we apply to the Library Fundamentals TS Working Paper the Proposed Wording from [N3866](#), "Invocation type traits (Rev. 2)", but dropping `function_call_operator`.

Moved by: Meredith

Seconded by: Nishanov

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 21: Move to direct the project editor for the Parallelism Technical Specification to produce an initial working paper based on [N3850](#).

Moved by: Boehm

Seconded by: Carruth

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

LWG motion 22: Move to direct the project editor for the Concurrency Technical Specification to produce an initial working paper based on [N3785](#) and [N3857](#) and incorporating modifications suggested by the reviews at this meeting.

Moved by: Boehm

Seconded by: Carruth

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	15	0	5
WG21	5	0	2



Concurrency motions:

SG1 motion 1: Move we apply [N3891](#), "A proposal to rename `shared_mutex` to `shared_timed_mutex`", to the C++14 WP.

Moved by: Boehm

Seconded by: Nishanov

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	6	0	1

SG1 motion 2: Move we apply the resolution of [LWG 2288](#), currently in new status, to the C++14 WP, taking care to rename `shared_mutex` as in N3891 (if accepted).

Moved by: Boehm

Seconded by: Carruth

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

SG1 motion 3: Move we apply [N3910](#), "What can signal handlers do? (CWG 1441)" (US3) into the C++14 WP.

Moved by: Boehm

Seconded by: Carruth

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

SG1 motion 4: Move we apply [N3927](#) "Definition of lock-free" (LWG 2075, US5) to the C++14 WP.

Moved by: Boehm

Seconded by: Carruth

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

SG1 motion 5: Move we apply the resolutions of issues [LWG 2104](#), [LWG 2186](#) (US27), which were intended to be in ready status, but not listed as such, to the C++14 WP.

Moved by: Boehm

Seconded by: Carruth

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

Transactional Memory motions:

SG5 motion 1: Move to direct the Convener to request a New Work item for a Technical Specification for C++ Transactional Memory based on [N3919](#) as an indication of its content.

Moved by: Wong

Seconded by: Boehm

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

WG21 motions:

WG21 motion 1: Move to appoint an editing committee composed of Daniel Krügler, Alisdair Meredith, Mike Miller, Bjarne Stroustrup, and Jeffrey Yasskin to approve the correctness of the C++ working paper as modified by the motions approved at this meeting, and to direct the Convener to transmit the approved updated C++ working paper to ITTF for DIS ballot.

Moved by: Hedquist

Seconded by: van Winkel

	<u>yes</u>	<u>no</u>	<u>abstain</u>
PL 22.16	unanimous	consent	
WG21	unanimous	consent	

11.2 PL22.16 motions

11.3 Review of action items, decisions made, and documents adopted by the committee

11.4 Issues delayed until today

No issues.

## 12 Plans for the future

### 12.1 Next and following meetings

Sutter explains the upcoming C++ meetings.

### 12.2 Mailings

## 13 Adjournment

Motion: to adjourn  
Moved by: Hedquist  
Seconded by: Orr

Unanimous consent.

Adjourned Saturday 15 February 2014.

## 14 Attendance

### 14.1 PL22.16 members

Principal representative designated with \*.

Organization	Representative	M	T	W	R	F	S
AMD	Robin Maffeo*	✓	✓	✓	✓		
Argonne National Lab	Hal Finkel	✓	✓	✓	✓	✓	
Bloomberg	John Lakos*	✓	✓	✓	✓	✓	✓
Bloomberg	Alisdair Meredith	✓	✓	✓	✓	✓	✓
Bloomberg	Dietmar Kühl	✓	✓	✓	✓	✓	✓
Brown	Walter E. Brown	✓	✓	✓	✓	✓	✓
Dinkumware	P.J. Plauger*	✓	✓	✓	✓	✓	
Dinkumware	Tana Plauger	✓	✓	✓	✓	✓	
DRW Holdings	Thomas Rodgers	✓	✓	✓	✓	✓	✓
Edison Design Group	Daveed Vandevoorde	✓	✓	✓	✓	✓	✓
Edison Design Group	Jens Maurer	✓	✓	✓	✓	✓	✓
Edison Design Group	John H. Spicer*	✓	✓	✓	✓	✓	✓
Edison Design Group	William M. Miller	✓	✓	✓	✓	✓	✓
Embarcadero Technologies	Dawn Perchik*	✓	✓	✓	✓	✓	✓
FlightSafety International	Billy Baker*	✓	✓	✓	✓	✓	✓
Gimpel Software	James Widman	✓	✓	✓	✓	✓	✓
Google	James Dennett	✓	✓	✓	✓	✓	✓
Google	JC van Winkel	✓	✓	✓	✓	✓	✓
Google	Chandler Carruth	✓	✓	✓	✓	✓	✓

Google	Jeffery Yasskin	✓	✓	✓	✓	✓	✓
Google	Richard Smith	✓	✓	✓	✓	✓	✓
Google	Geoffrey Romer	✓	✓	✓	✓	✓	✓
GreenWireSoft	Juan Alday*	✓	✓	✓	✓	✓	✓
Hewlett-Packard Development	Hans Boehm	✓	✓	✓	✓	✓	✓
IBM	Michael Wong*	✓	✓	✓	✓	✓	✓
IBM	Maged Michael		✓	✓	✓		
IBM	Paul E. McKenney	✓	✓	✓	✓	✓	✓
Indiana University	Larisse Voufo	✓	✓	✓	✓	✓	✓
Intel	Clark Nelson*	✓	✓	✓	✓	✓	✓
Intel	Pablo Halpern	✓	✓	✓	✓	✓	✓
Intel	Robert Geva		✓	✓			
Intel	Justin Gottschlich		✓	✓			
Intel	Tatiana Shpeisman		✓	✓			
KCG Holdings	Robert Douglas*	✓	✓	✓	✓	✓	
Lexmark International	Michael Price*	✓	✓	✓	✓	✓	✓
Lexmark International	Christopher Sammis	✓	✓				
Louisiana State University	Hartmut Kaiser*	✓	✓	✓			
Louisiana State University	Agustin Berge	✓	✓	✓	✓	✓	✓
Microsoft	Jonathan Caves*	✓	✓	✓	✓	✓	✓
Microsoft	Herb Sutter	✓	✓	✓	✓	✓	✓
Microsoft	Artur Laksberg	✓	✓	✓	✓		
Microsoft	Stephan T Lavavej	✓	✓	✓	✓	✓	✓
Microsoft	Gabriel Dos Reis	✓	✓	✓	✓	✓	✓
Microsoft	Gor Nishanov	✓	✓	✓	✓	✓	✓
Microsoft	Vinny Romano	✓	✓	✓	✓	✓	✓
Microsoft	James McNellis	✓	✓	✓	✓	✓	✓
Microsoft	Mark Hall			✓			
NVidia	Olivier Giroux	✓	✓	✓	✓	✓	✓
NVidia	Jared Hoberock	✓	✓	✓	✓		
Oracle	Stephen D. Clamage		✓	✓	✓	✓	✓
Oracle	Victor Luchangco		✓	✓	✓	✓	
Perennial	Barry Hedquist*	✓	✓	✓	✓	✓	✓
Perennial	Beman G. Dawes	✓	✓	✓	✓		
Perennial	Lawrence Crowl	✓	✓	✓	✓	✓	✓
Plum Hall	Thomas Plum*	✓	✓	✓	✓	✓	✓
Programming Research Group	Christof Meerwald	✓	✓	✓	✓	✓	✓
Qualcomm	Marshall Clow*	✓	✓	✓	✓	✓	✓

Red Hat	Jason Merrill*	✓	✓	✓	✓	✓	✓
Red Hat	Jonathan Wakely	✓	✓	✓	✓	✓	
Red Hat	Torvald Riegel	✓	✓	✓	✓	✓	
Riverbed	Kyle Kloepper*	✓	✓	✓	✓	✓	
Sandia National Labs	Carter Edwards	✓	✓	✓	✓	✓	
Seymour	Bill Seymour*	✓	✓	✓		✓	✓
Symantec	Mike Spertus*	✓	✓	✓			
Texas A&M University	Bjarne Stroustrup*	✓	✓	✓	✓	✓	✓

### Members Attaining Voting Rights at This Meeting

Organization
AMD
Argonne National Lab
FlightSafety International
GreenWireSoft
KCG Holdings
Lexmark International
Sandia National Labs

### 14.2 PL22.16 non-members

Organization	Representative	M	T	W	R	F	S
Bob Taco Industries	Michael McLaughlin	✓	✓	✓			
CryptoTec	Mikael Kilpelainen	✓	✓	✓	✓	✓	✓
Datasift	Dinka Ranns	✓	✓	✓	✓	✓	✓
HSR	Peter Sommerlad	✓	✓	✓	✓	✓	
LTK Engineering	Alan Talbot	✓	✓	✓	✓	✓	✓
Reliable Software	Bartosz Milewski	✓	✓	✓	✓		
Roundhouse Consulting	Pete Becker	✓	✓	✓	✓	✓	
University Carlos III	J. Daniel Garcia	✓	✓	✓	✓	✓	✓
University of Akron	Andrew Sutton	✓	✓	✓	✓	✓	✓
Vollmann Engineering	Detlef Vollmann		✓	✓	✓		
Thalmic Labs	Stefanus Du Toit	✓	✓	✓	✓	✓	
	Nicolai Josuttis	✓	✓	✓	✓	✓	
	Ville Voutilainen	✓	✓	✓	✓	✓	✓
	Roger Orr	✓	✓	✓	✓	✓	✓
Mozilla	Botond Ballo	✓	✓	✓	✓	✓	✓
	Cassio Neri	✓	✓	✓	✓	✓	✓
	Faisal Vali	✓	✓	✓	✓	✓	✓
	Nat Goodspeed		✓	✓	✓		

	Zhihao Yuan	✓	✓	✓	✓	
	Eric Niebler	✓	✓	✓	✓	✓
	Yuriy Solodkyy	✓				
F5 Networks	Michael VanLoon	✓	✓	✓	✓	✓
	Jeff Snyder		✓	✓	✓	✓
	Xiang Fan	✓				
	Josh Petrie	✓				
CERT	Aaron Ballman	✓	✓	✓	✓	✓
Amazon	Victor Bogado	✓	✓	✓	✓	
	Marc Singer	✓	✓	✓		✓

### 14.3 JTC1/SC22/WG21 technical experts

Heads of delegation designated with \*.

Affiliation	Representative
Netherlands	JC van Winkel*
Canada	Michael Wong*
Canada	Stefanus Du Toit
United States	Barry Hedquist*
Germany	Nicolai Josuttis
Switzerland	Peter Sommerlad
Switzerland	Detlef Vollmann*
Spain	J. Daniel Garcia*
United Kingdom	Roger Orr*
United Kingdom	Jeff Snyder
United Kingdom	Cassio Neri
Finland	Ville Voutilainen*
Finland	Mikael Kilpelainen