Document number: N3623
Date: 2013-05-03
Reply to: Kyle Kloepper (Kyle.Kloepper@riverbed.com)

Minutes

PL22.16 Meeting No. 60
15-20 April 2013 – Bristol, UK

1 Opening activities

Steve Clamage calls the meeting to order Monday 15 April 2013 at 9:19 a.m. BST.

1.1 Opening comments, welcome from host

Roger Orr welcomes everyone to sunny Bristol.

1.2 Introductions

Everyone in the room introduces themselves.

1.3 Meeting guidelines (Patent and Anti-Trust)

Clamage directs group to the following websites without further comment:

- http://www.incits.org/pat_slides.pdf
- http://www.incits.org/inatrust.htm

1.4 Membership, voting rights, and procedures for the meeting

At Clamage's request Clark Nelson explains membership and voting rights.

1.5 Agenda review and approval

```
Motion: to accept agenda in N3469.
Moved by: Barry Hedquist
Seconded by: Nevin Liber

    Unanimous consent.
```

1.6 Approval of the minutes of the previous meeting

```
Motion: to accept minutes from previous meeting with editorial changes
(N3454 and N3455).
Moved by: Barry Hedquist
Seconded by: Clark Nelson

    Unanimous consent.
```

1.7 Editor's report, approval of draft

Stefanus Du Toit summarizes the editor's report from post-Portland (N3486). The only changes were those voted in at Portland along with a large number of editorial changes.

```
Motion: to accept N3485 as the working draft for Bristol.
Moved by: Jonathan Caves
Seconded by: Stefanus Du Toit

    Unanimous consent.
```

1.8 Liaison reports (including WG21 study groups)

WG14 Report:

Tom Plum directs everyone to the liaison report in the minutes from the pre-Bristol teleconference (N3621).

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

Clamage relays comments from Sutter. Intent of this meeting is to produce a CD. SG chairs are asked to prioritize C++14 issues. The previous ballot for a document number for C++14 had errors and will be redone.

Nelson shows agenda for evening meetings. A starting time of 7:30 is agreed upon.

Clamage ask sub-group and study group chairs to give status report:

Core (CWG):

Mike Miller reports for CWG.

Library (LWG) and Library Evolution (LEWG):

Alisdair Meredith reports for LWG and LEWG.

Evolution (EWG):

Stroustrup reports for EWG.

Study group 1 – Concurrency (SG1):

Hans Boehm reports group will be busy all week.

Study group 2 – Modules (SG2):

Doug Gregor reports there are no new papers, but will be meeting for half a day later on in the week.

Study group 3 – File System (SG3):

Meredith reports on behalf of Beman Dawes.

Study group 4 – Networking (SG4):

Kloepper reports there are three papers and two late papers. Goals for this week are to come to consensus on IP address papers and bring byte order paper to vote on Friday.

Study group 5 – Transactional Memory (SG5):

Michael Wong reports that a TM group has been meeting twice a month since 2008. There are three papers to be considered at this meeting.

Study group 6 – Numerics (SG6):

Lawrence Crowl reports.

Study group 7 – Reflection (SG7):

Carruth reports there is not much to discuss and SG7 would like to have one evening meeting.

Study group 8 – Concepts (SG8):

Matt Austern reports that static if has been dropped. SG8 is not planning to meet independently, but as part of EWG.

Study group 9 – Ranges (SG9):

Marshall Clow reports.

Study group 10 – Feature Test (SG10):

Nelson reports that SG10 will have inaugural meeting. Background is to define macros to determine what new features are implemented and which are not. Not targeting anything for C++14.

1.10 New business requiring actions by the committee

There is no new business.

2 Organize Working Groups and Study Groups, establish working procedures

3 WG and SG sessions

4 WG and SG sessions continue

Tuesday 16 April, 8:30am-5:30pm

5 WG and SG sessions continue

Wednesday 17 April, 8:30am-5:30pm

6 WG and SG sessions continue

Thursday 18 April, 8:30am-5:30pm

7 WG and SG sessions continue

Friday 19 April, 8:30am–noon

8 General session

Friday 19 April, 1:30pm–5:30pm

8.1 WG and SG status and progress reports

Reports take place along with straw votes in 8.2.

8.2 Presentation and discussion of proposals. Straw votes taken.

Clamage presents Miller's suggestion that discussion is limited to five minutes per issue with a vote to be taken at the end, or discussion differed to end of motions list. There is unanimous consent to this suggestion. Andy Sawyer volunteers to keep time.

Core motions

Miller presents CWG motions.

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.

CWG motion 8 passes with unanimous consent.

CWG motion 9 passes with unanimous consent.

```
straw poll: CWG motion 10

         yes   no    abstain
PL22.16  18    0     2
WG21     unanimous consent
```

CWG motion 10 passes.

CWG motion 11 passes with unanimous consent.

CWG motion 12 passes with unanimous consent.

```
straw poll: CWG motion 15

         yes   no    abstain
PL22.16  17    0     5
WG21     unanimous consent
```

CWG motion 15 passes.

```
straw poll: CWG motion 16

         yes   no    abstain
PL22.16  15    1     6
WG21     7     0     1
```

CWG motion 16 passes.

```
straw poll: CWG motion 17
```

```
         yes   no    abstain
PL22.16  unanimous consent
WG21     7     0     1
```

CWG motion 17 passes.

Library motions

Meredith gives working group 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.

```
straw poll: LWG motion 5

         yes   no    abstain
PL22.16  14    1     4
WG21     unanimous consent
```

LWG motion 5 passes.

LWG motion 6 passes with unanimous consent.

LWG motion 7 passes with unanimous consent.

LWG motion 8 passes with unanimous consent.

```
straw poll: LWG motion 9

         yes   no    abstain
PL22.16  13    1     8
WG21     unanimous consent
```

LWG motion 9 passes.

LWG motion 10 passes with unanimous consent.

```
straw poll: LWG motion 11

         yes   no    abstain
PL22.16  11    2     10
WG21     6     0     3
```

LWG motion 11 passes.

```
straw poll: LWG motion 12

          yes   no    abstain
PL22.16   7     6     8
WG21      6     2     0
```

LWG motion 12 passes.

```
straw poll: LWG motion 13

          yes   no    abstain
PL22.16   3     9     9
WG21      6     2     0
```

Stroustrup does not consider that consensus and motion 13 is removed.

```
straw poll: LWG motion 14

          yes   no    abstain
PL22.16   16    2     5
WG21      unanimous consent
```

LWG motion 14 passes.

```
straw poll: LWG motion 15

          yes   no    abstain
PL22.16   1     15    8
WG21      1     2     5
```

Stroustrup says there is no consensus and LWG motion 15 fails.

```
straw poll: LWG motion 16

          yes   no    abstain
PL22.16   11    12    0
WG21      7     0     1
```

LWG motion 16 passes.

LWG motion 17 passes with unanimous consent.

LWG motion 18 passes with unanimous consent.

LWG motion 19 (edited to motion 20) is not a motion. Nelson suggests taking a straw poll.

```
straw poll: Move we ask Beman as the filesystem TS editor to turn N3545
into the formal working draft, with a view to filing a PDTS ballot at
the next meeting.

    unanimous consent.
```

Evolution motions:

Stroustrup presents.

```
straw poll: EWG motion 1

          yes   no    abstain
PL22.16   16    0     3
WG21      unanimous consent
```

EWG motion 1 passes.

Library evolution motions:

Yasskin presents.

LEWG motion 1 passes with unanimous consent.

Concurrency motions:

Hans Boehm presents.

SG1 motion 1 passes with unanimous consent.

Boehm removes motion 2.

SG1 motion 3 passes with unanimous consent.

SG1 motion 4 passes with unanimous consent.

```
straw poll: SG1 motion 5

          yes   no    abstain
PL22.16   15    0     7
WG21      7     0     1
```

SG1 motion 5 passes.

```
straw poll: SG1 motion 6

          yes   no    abstain
PL22.16   14    2     6
WG21      5     1     2
```

Stroustrup declares consensus and SG1 motion 6 passes.

Study group reports:

Wong reports on SG5.

Crowl reports that SG6 work would best be handled by C and then incorporated by reference by C++.

SG7 Chandler reports did not have a chance to meet

SG8 was part of EWG and was reported on by Stroustrup.

Clow reports SG9.

Nelson reports on SG10.

Clamage asks for show of hands for who would like to participate in database study group. Seven committee members raise hands. Clamage will ask convener to create database study group.

Carruth requests break at 17:32. Clamage resumes meeting at 17:44.

Deferred motions:

```
straw poll: CWG motion 13

          yes   no    abstain
PL22.16   11    2     5
WG21      5     1     2
```

Stroustrup declares consensus and CWG motion 13 passes.

```
straw poll: CWG motion 14

          yes   no    abstain
PL22.16   5     13    1
WG21      6     1     1
```

Stroustrup declares consensus and CWG motion 14 passes.

```
straw poll: LWG motion 12

          yes   no    abstain
PL22.16   8     7     3
WG21      6     1     1
```

LWG motion 12 passes.

```
straw poll: Add N3662 to formal motions page.

          yes   no    abstain
PL22.16   9     2     6
WG21      6     0     2
```

9 WG and SG sessions continue

10 WG and SG sessions continue

Saturday 20 April, 8:30am-noon

11 Review of the meeting

11.1 WG21 motions

The room is polled and 21 voting members of PL22.16 and 8 WG21 national bodies are present.

Summary of motion results:

Core	result
CWG 1	carried
CWG 2	carried
CWG 3	carried
CWG 4	carried
CWG 5	carried
CWG 6	carried
CWG 7	carried
CWG 8	carried
CWG 9	carried
CWG 10	carried
CWG 11	carried
CWG 12	carried
CWG 13	carried
CWG 14	lost
CWG 15	carried
CWG 16	carried
CWG 17	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	lost
LWG 12	carried
~~LWG 13~~	removed
LWG 14	carried
~~LWG 15~~	removed
LWG 16	carried

```
LWG 17    carried
LWG 18    carried
LWG 19    carried
~~LWG 20~~    removed

Evolution
EWG 1     carried

Library Evolution
LEWG 1    carried
~~LEWG 2~~    removed
~~LEWG 3~~    removed

Concurrency
SG1 1     carried
~~SG1 2~~     removed
SG1 3     carried
SG1 4     carried
SG1 5     lost
SG1 6     lost
```

The following motions are moved by the chair:

Core motions:

```
CWG motion 1:  Move we accept as Defect Reports all issues in "ready"
status from N3539 except for 1464 and apply their proposed resolutions
to the C++ working paper:
129  223  240  312  496  616  1013 1310 1318 1320 1328 1330 1374 1405
1411 1412 1413 1425 1435 1437 1442 1456 1472 1475 1476 1479 1481 1489
1495 1502 1503 1504 1506 1510 1511 1515 1516 1522 1527 1528 1532 1533
1535 1537 1538 1539 1541 1543 1544 1550 1553 1556 1557 1559 1560

          yes   no    abstain
PL 22.16  21    0     0
WG21      8     0     0
```

```
CWG motion 2:  Move we apply the proposed resolution of issue 1464 from
N3539 to the C++ working paper.

          yes   no    abstain
PL 22.16  21    0     0
WG21      8     0     0
```

CWG motion 3: Move we accept as Defect Reports all issues in "tentatively ready" status from N3539 except for 1484 and 1514 and apply their proposed resolutions to the C++ working paper:
977 1356 1462 1465 1471 1473 1477 1482 1487 1492 1494 1507 1563 1605

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

CWG motion 4: Move we accept as Defect Reports the following issues from N3539 and apply their proposed resolutions to the C++ working paper:
903 1213 1358 1531

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

CWG motion 5: Move we accept as a Defect Report issue 974 from N3539 and apply its proposed resolution to the C++ working paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

CWG motion 6: Move we apply N3472, "Binary Literals in the C++ Core Language," to the C++ working paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

CWG motion 7: Move we apply N3624, "Core Issue 1512: Pointer comparison vs qualification conversions (revision 3)," to the C++ working paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

CWG motion 8: Move we apply N3639, "Runtime-sized arrays with automatic storage duration (revision 5)," to the C++ working paper.

	yes	no	abstain
PL 22.16	16	0	5
WG21	8	0	0

CWG motion 9: Move we apply N3638, "Return type deduction for normal functions," to the C++ working paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

CWG motion 10: Move we apply N3648, "Wording Changes for Generalized Lambda-capture," to the C++ working paper.

	yes	no	abstain
PL 22.16	17	0	4
WG21	8	0	0

CWG motion 11: Move we apply N3653, "Member initializers and aggregates," to the C++ working paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

CWG motion 12: Move we apply N3667, "Drafting for Core 1402," to the C++ working paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

CWG motion 13: Move we apply N3652, "Relaxing constraints on constexpr functions" and "constexpr member functions and implicit const," to the C++ working paper.

	yes	no	abstain
PL 22.16	14	1	5
WG21	8	0	0

CWG motion 14: Move we apply N3661, "Digit Separators," to the C++ working paper.

	yes	no	abstain
PL 22.16	1	17	2
WG21	2	3	3

CWG motion 15: Move we apply N3664, "Clarifying Memory Allocation," to the C++ working paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

CWG motion 16: Move we apply N3651, "Variable Templates (Revision 1)," to the C++ working paper.

	yes	no	abstain
PL 22.16	14	1	5
WG21	8	0	0

CWG motion 17: Move we apply N3649, "Generic (Polymorphic) Lambda Expressions (Revision 3) ," to the C++ working paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	7	0	1

Library motions:

LWG motion 1: Move we apply the resolutions of all issues in "Ready" and "Tentatively Ready" status from N3438 to the C++ Working Paper:

2091 Misplaced effect in m.try_lock_for()
2092 Vague Wording for condition_variable_any
2093 Throws clause of condition_variable::wait with predicate
2145 error_category default constructor
2147 Unclear hint type in Allocator's allocate function
2163 nth_element requires inconsistent post-conditions
2169 Missing reset() requirements in unique_ptr specialization
2172 Does atomic_compare_exchange_* accept v == nullptr arguments?
2080 Specify when once_flag becomes invalid
2109 Incorrect requirements for hash specializations
2144 Missing noexcept specification in type_index
2174 wstring_convert::converted() should be noexcept
2175 string_convert and wbuffer_convert validity
2177 Requirements on Copy/MoveInsertable
2187 vector<bool> is missing emplace and emplace_back member functions
2197 Specification of is_[un]signed unclear for non-arithmetic types
2200 Data race avoidance for all containers, not only for sequences
2209 assign() overspecified for sequence containers
2211 Replace ambiguous use of "Allocator" in container requirements
2222 Inconsistency in description of forward_list::splice_after single element overload
2225 Unrealistic header inclusion checks required
2231 DR 704 removes complexity guarantee for clear()

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

LWG motion 2: Move we apply the resolutions of all issues in paper N3673, moved from "Review" to "Ready" during this meeting.

2094 duration conversion overflow shouldn't participate in overload resolution
2122 merge() stability for lists versus forward lists
2128 Absence of global functions cbegin/cend
2148 Hashing enums should be supported directly by std::hash
2149 Concerns about 20.8/5
2162 allocator_traits::max_size missing noexcept
2176 Special members for wstring_convert and wbuffer_convert
2196 Specification of is_*[copy/move]_[constructible/assignable] unclear for non-referencable types

2203 scoped_allocator_adaptor uses wrong argument types for piecewise construction
2207 basic_string::at should not have a Requires clause
2210 Missing allocator-extended constructor for allocator-aware containers
2229 Standard code conversion facets underspecified
2235 Undefined behavior without proper requirements on basic_string constructors

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

LWG motion 3: Move we apply N3545, An Incremental Improvement to integral_constant, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

LWG motion 4: Move we apply N3644, Null Forward Iterators, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

LWG motion 5: Move we apply N3668, std::exchange(), to the C++ Working Paper.

	yes	no	abstain
PL 22.16	12	1	6
WG21	8	0	0

LWG motion 6: Move we apply N3658, Compile-time integer sequences, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	21	0	0

WG21	8	0	0

LWG motion 7: Move we apply N3670, Addressing Tuples by Type, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

LWG motion 8: Move we apply N3671, Making non-modifying sequence operations more robust, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

LWG motion 9: Move we apply N3656, make_unique, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	16	0	5
WG21	8	0	0

LWG motion 10: Move we apply N3654, Quoted Strings, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

LWG motion 11: Move we apply N3665, Uninterleaved String Output Streaming, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	3	11	7

WG21	3	2	3

LWG motion 12: Move we apply N3642, User-defined Literals, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	8	5	8
WG21	5	1	1

~~LWG motion 13:~~ Move we apply N3660, User-defined complex Literals, to the C++ Working Paper.

[motion removed]

LWG motion 14: Move we apply N3655 (excluding part 4), Transformation Traits Redux, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	14	1	5
WG21	8	0	0

~~LWG motion 15:~~ Move we apply N3645, Splicing Maps and Sets, to the C++ Working Paper.

[motion removed]

LWG motion 16: Move we apply N3657, Adding heterogeneous comparison lookup to associative containers, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

LWG motion 17: Move we apply N3672, A proposal to add a utility class to represent optional objects, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

LWG motion 18: Move we apply N3669, Fixing constexpr member functions without const, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

LWG motion 19: Move we apply N3662, C++ Dynamic Arrays (dynarray), to the C++ Working Paper.

	yes	no	abstain
PL 22.16	14	0	7
WG21	6	1	1

~~LWG motion 20:~~ Move we ask Beman as the filesystem TS editor to turn N3545 into the formal working draft, with a view to filing a PDTS ballot at the next meeting.

[removed as this does not require a motion]

Evolution motions:

EWG motion 1: Move to direct the Convener to request a New Work Item for a Technical Specification on Concepts Lite.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

Library evolution motions:

LEWG motion 1: Move to direct the Convener to request a New Work Item for a Technical Specification on Networking.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

~~LEWG motion 2~~: Move to direct the Convener to request a New Work Item for a Technical Specification on Concurrency and Parallelism.

[motion removed]

~~LEWG motion 3:~~ Move to direct the Convener to request a New Work Item for a Technical Specification on Library Extensions 2.

[motion removed]

Concurrency motions:

SG1 motion 1: Move we apply the resolutions of the following issues in "Review" status from N3522 to the C++ Working Paper:

LWG2098 (promise throws clauses)
LWG2130 (missing ordering constraints for fences)
LWG2138 (atomic_flag::clear ordering constraints)
LWG2140 (notify_all_at_thread_exit synchronization)
LWG2190 (ordering of condition variable operations, reflects Posix discussion)

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

~~SG1 motion 2:~~ Move we apply the resolution of issue LWG2100 (adjust async wording for timeouts) in "Review" status from N3522 to the C++ Working Paper, after deleting "non-timed" from the resolution.

[motion removed]

SG1 motion 3: Move we apply the resolution of issue LWG2185 (missing throws clause for future timed wait) in "Review" status from N3522 to the C++ Working Paper. If N3637 (Motion 5) is incorporated into the working paper, make the same changes to waiting_future.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

SG1 motion 4: Move that we apply N3659, Shared Locking in C++, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	21	0	0
WG21	8	0	0

SG1 motion 5: Move we apply N3637, async and ~future, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	8	3	10
WG21	4	2	2

SG1 motion 6: Move we apply N3636, ~thread Should Join, to the C++ Working Paper.

	yes	no	abstain
PL 22.16	11	2	8
WG21	5	2	1

Other motions:

Other motion 1: Move to appoint an editing committee composed of Richard Smith, Mike Miller, Daniel Krugler, and Alisdair Meredith to approve the correctness of the working draft as modified by the motions approved at the Bristol meeting, and to direct the Convener to forward the approved updated working draft to SC22 for CD ballot.

	yes	no	abstain
PL 22.16	21	0	0

```
WG21     8     0     0
```

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

Clamage asks if there are any issues delayed until today. No response.

12 Plans for the future

12.1 Next and following meetings

Nevin Liber talks about upcoming Chicago meeting.

Clamage takes a poll for who would be interested in attending an in person meeting between Chicago and Rapperswil. 19 say they would be.

Nelson moves to thank the host Roger Orr. Applause ensues.

Clow relays thanks for the live radio feed from the meetings.

Carruth thanks everyone who took notes this week.

12.2 Mailings

Nelson says the post-Bristol mailing deadline is 3 May and pre-Chicago deadline is 30 August. Nelson also directs everyone to look at SD-1 in the mailing as it is useful.

13 Adjournment

```
Motion: to adjourn
Moved by: Clark Nelson
Seconded by: Chandler Carruth

Unanimous consent.
```

Adjourned Saturday 20 April at 2:47 p.m. BST.

14 Attendance

All listed organizations have active voting status. Principal representatives are designated with *.

Organization	Representative	M	T	W	R	F	S
Apple	Doug Gregor	✓	✓	✓	✓	✓	✓
Bloomberg	John Lakos*	✓	✓	✓	✓	✓	✓
Bloomberg	Alisdair Meredith	✓	✓	✓	✓	✓	✓
Bloomberg	Dietmar Kühl	✓	✓	✓	✓	✓	✓
Cisco Systems	Martin Sebor*	✓	✓	✓	✓	✓	
Cisco Systems	Ismail Pazarbasi	✓	✓	✓	✓	✓	
Dinkumware	P.J. Plauger*	✓	✓	✓	✓	✓	
Dinkumware	Tana Plauger	✓	✓			✓	
Dinkumware	Margaret Trimble	✓					
DRW Holdings	Nevin Liber*	✓	✓	✓	✓	✓	✓
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*	✓	✓	✓	✓	✓	✓
Gimpel Software	James Widman	✓	✓	✓	✓	✓	
Google	Lawrence Crowl*	✓	✓	✓	✓	✓	✓
Google	James Dennett	✓	✓	✓	✓	✓	
Google	JC van Winkel	✓	✓	✓	✓	✓	✓
Google	Matthew Austern	✓	✓	✓	✓	✓	
Google	Chandler Carruth	✓	✓	✓	✓	✓	✓
Google	Jeffery Yasskin	✓	✓	✓	✓	✓	✓
Google	Richard Smith	✓	✓	✓	✓	✓	✓
Hewlett-Packard Development	Hans Boehm	✓	✓	✓	✓	✓	✓
IBM	Michael Wong*	✓	✓	✓	✓	✓	✓
IBM	Maged Michael		✓	✓	✓		
Intel	Clark Nelson*	✓	✓	✓	✓	✓	✓
Intel	Pablo Halpern	✓	✓	✓	✓	✓	
Intel	Robert Geva	✓	✓	✓	✓	✓	
Intel	Stefanus Du Toit	✓	✓	✓	✓	✓	✓
Microsoft	Jonathan Caves*	✓	✓	✓	✓	✓	✓
Microsoft	Herb Sutter	✓	✓	✓	✓		
Microsoft	Niklas Gustafsson	✓	✓	✓	✓	✓	
Microsoft	Stephan Lavavej	✓	✓	✓	✓	✓	
NVidia	Olivier Giroux	✓	✓	✓	✓	✓	✓

NVidia	Jaydeep Marathe		✓				
NVidia	Jared Hoberock		✓	✓	✓		
NVidia	Michael Garland		✓	✓	✓		
Oracle	Paolo Carlini*	✓	✓	✓	✓	✓	✓
Oracle	Stephen D. Clamage	✓	✓	✓	✓	✓	✓
Oracle	Darryl Gove	✓	✓	✓	✓		
Oracle	Victor Luchangco	✓	✓	✓			
Perennial	Barry Hedquist*	✓	✓	✓	✓	✓	✓
Plum Hall	Thomas Plum*	✓	✓	✓	✓	✓	
Programming Research Group	Richard Corden*	✓	✓	✓	✓	✓	
Programming Research Group	Christof Meerwald	✓	✓	✓	✓	✓	
Qualcomm	Marshall Clow*	✓	✓	✓	✓	✓	✓
Red Hat	Jason Merrill*	✓	✓	✓	✓	✓	
Red Hat	Benjamin Kosnik	✓	✓	✓	✓	✓	✓
Red Hat	Torvald Riegel	✓	✓	✓	✓	✓	
Red Hat	Matt Newsome	✓			✓		
Riverbed	Kyle Kloepper*	✓	✓	✓	✓	✓	✓
Riverbed	Neal Meyer	✓	✓	✓	✓	✓	
Seymour	Bill Seymour*	✓	✓	✓	✓	✓	✓
Symantec	Mike Spertus*	✓	✓	✓	✓	✓	✓
Symantec	Dinka Ranns	✓	✓	✓	✓	✓	
Texas A&M University	Bjarne Stroustrup*	✓	✓		✓	✓	
Texas A&M University	Andrew Sutton	✓	✓	✓	✓	✓	