WG21 2017-02 Kona Minutes

ISO/IEC JTC1 SC22 WG21 N4654 — 2017-03-14

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February 27 - March 4, 2017 - Kona, HA, USA

Chair: Clark Nelson

1. Opening activities (Monday 8:30)

1.1 Opening comments, welcome from host

Plum welcomed everyone.

1.2 Meeting guidelines

Every participant is responsible for understanding and abiding by the INCITS Antitrust Guidelines and Patent Policy and the [ISO Code of Conduct][isococ].

1.3 Membership, voting rights, and procedures for the meeting

The chair requested that prospective PL22.16 members inform the chair (Nelson) or vice-chair (Spicer) that they are present.

Spicer explained the attendance sheet rules and requested people adding themselves print their names clearly.

1.4 Introductions

Representatives from the following countries:

Canada Finland Germany Netherlands Russia Spain Switzerland UK US

1.5 Agenda review and approval

Agenda is in a revision of N4632, posted on the wiki.

Clow moved to adopt the agenda, Wakely seconded. Approved by unanimous consent.

1.6 Editor's reports, approval of working drafts

Document	Editor's report	Prospective WD

Document	Editor's report	Prospective WD
C++ Standard	N4639	N4640
Modules TS	N4638	N4637
Coroutines TS	N4629	N4628
Ranges TS	N4621	N4620
Networking TS	N4627	N4626
Concepts TS	N4642	N4641

Approved by unanimous consent.

Sutter noted a change to ISO drafting directives which requires every IS and TS to use specific section numbers, which might require reordering clauses. Requested editors to speak to him for guidance.

1.7 Approval of the minutes of the previous meetings (PL22.16 motion)

Meeting	Minutes
WG21 Issaquah	N4623
PL22.16 Issaquah	N4634
PL22.16 ballot comment resolution telecon	2017-00008
WG21 pre-Kona administrative telecon	N4645

WG21 minutes approved by unanimous consent.

2. Liaison reports, and WG21 study group reports (see pre-meeting WG21 telecon minutes)

3. WG progress reports and work plans for the week (Core, Evolution, Library, Library Evolution)

Clow noted that P0317 will be on the straw polls on Friday without any discussion this meeting because it was already approved by LWG at the last meeting and accidentally missed off the polls

Sutter announced that a future direction discussion will take place on Thursday evening. van Winkel gave a short presentation on P0559R0, expressing concern from some National Body representatives that progress is too slow. The intent is to aid decision making by capturing design rules, procedures and cultural rules for the committee to follow.

4. New business requiring action by the committee

Nelson announced that his term as Chair will be ending next year, so a call for volunteers will be going out. Spicer will be volunteering, in which case a new Vice-Chair will be needed.

Wakely will not be attending the Toronto meeting, so a volunteer for Secretary will be needed for that meeting. Patrice Roy volunteered.

5. Organize working groups and study groups, establish working procedures

(Clarify rooms available for evening sessions)

6. WG and SG sessions

The WG and SG chairs must arrange for any proposals to be written up in the form of a motion, and made available by 2:30 Friday.

7. Review of the meeting (Friday 2:00)

WG and SG status and progress reports. Presentation and discussion of proposals to be considered for consensus adoption by full WG21.

SG5: Transactional memory (Wong)

SG6: Numerics (Crowl)

SG7: Reflection (Carruth)

SG10: Feature test (Nelson)

SG12: Undefined and unspecified behavior (Dos Reis)

SG14: Games & low latency (Wong)

SG1: Concurrency (Boehm)

Evolution (Voutilainen)

Library Evolution (Yasskin)

Core (Miller)

CWG Motions

Motion 1 Move to accept as Defect Reports the issues in P0575R1 (Core Language "ready" issues) and apply their proposed resolutions to the C++ working paper.

Approved by unanimous consent.

Motion 2 Move to accept as Defect Reports the issues in P0576R1 (Core Language "tentatively

ready" issues) and apply their proposed resolutions to the C++ working paper.

Approved by unanimous consent.

Motion 3 Move to accept as Defect Reports the issues in P0622R0 (Additional Core Language Working Group "ready" and "tentatively ready" Issues) and apply their proposed resolutions to the C++ working paper.

Approved by unanimous consent.

Motion 4 Move to apply the changes in P0612R0 (NB comment CH2: volatile) to the C++ working paper.

Approved by unanimous consent.

Motion 5 Move to accept as a Defect Report the issue in P0613R0 (NB comment GB15: Resolution of Core Issue 2011) and apply its proposed resolution to the C++ working paper.

Approved by unanimous consent.

Motion 6 Move to apply the changes in P0298R3 (A byte type definition) to the C++ working paper.

Favor	Opposed	Abstain
44	2	8

Motion passed.

Motion 7 Move to apply the changes in P0615R0 (Renaming for structured bindings) to the C++ working paper.

Favor	Opposed	Abstain
34	0	16

Motion passed.

Motion 8 Move to apply the changes in P0620R0 (Drafting for class template argument deduction issues) to the C++ working paper.

Favor	Opposed	Abstain
44	0	9

Motion passed.

Motion 9 Move to apply the changes in P0270R3 (Removing C dependencies from signal handler wording) to the C++ working paper.

Approved by unanimous consent.

Motion 10 Move to apply the changes in P0250R3 (Wording improvements for initialization and thread ids (CWG 2046, 1784)) to the C++ working paper.

Approved by unanimous consent.

Motion 11 Move to apply the changes in P0582R0 (Modules: Contexts of Template Instantiations and Name Lookup) to the Modules TS working paper, to appoint a review committee composed of Jason Merrill, Nathan Sidwell, and William M. Miller to approve the correctness of the resulting document, and to direct the convener to transmit the approved updated working paper for PDTS ballot.

There was a lengthy discussion. Sutter wanted to take the motion as written, and if it failed to split it into two.

Favor	Opposed	Abstain
26	18	11

Motion did not pass.

Motion 11a Move to apply the changes in P0582R0 (Modules: Contexts of Template Instantiations and Name Lookup) to the Modules TS working paper.

Favor	Opposed	Abstain
43	1	9

Motion passed.

Motion 11b Move to appoint a review committee composed of Jason Merrill, Nathan Sidwell, and William M. Miller to approve the correctness of the resulting document, and to direct the convener to transmit the approved updated working paper for PDTS ballot.

Favor	Opposed	Abstain
26	16	12

Motion did not pass.

Library (Clow)

LWG Motions

Motion 1 Move that we approve the working draft of the Coroutines TS N4649 and direct the Convener to transmit it for PDTS ballot.

Favor	Opposed	Abstain
41	1	9

Motion passed.

Motion 2 Move to apply to the C++ working paper the proposed resolutions of all of the issues in P0165R4 (C++ Standard Library Issues to be moved in Kona).

Favor	Opposed	Abstain
45	0	3

Motion passed.

Motion 3 Move to apply to the C++ working paper the proposed resolutions of "Review" issues in P0610R0:

2796 `tuple` should be a literal type
2790 Missing specification of `istreambuf_iterator::operator->`
2676 Provide `filesystem::path` overloads for File-based streams

Approved by unanimous consent.

Filesystem

Motion 4 Move to apply to the C++ working paper the proposed wording in P0317R1 (Directory Entry Caching for Filesystem).

Approved by unanimous consent.

Motion 5 Move to apply to the C++ working paper the proposed wording in P0492R2 (Proposed Resolution of C++17 National Body Comments for Filesystems).

This resolves NB comments CA 2, CA 3, CA 6, CA 7, US 25, US 31, US 32, US 33, US 34, US 35, US 36, US 37, US 38, US 39, US 40, US 41, US 42, US 43, US 44, US 45, US 46, US 47, US 48, US 49, US 50, US 51, US 52, US 53, US 54, US 55, US 56, US 57, US 58, US 59, US 60, US 61, US 62, US 63, US 73, US 74, US 77, US 78, US 185, FI 14, Late 36, Late 37, Late 42

Approved by unanimous consent.

Called for applause for Beman Dawes.

Motion 6 Move to apply to the C++ working paper the proposed wording in P0430R2 (File system library on non-POSIX-like operating systems)

This resolves NB comments US 75, US 76, US 79, CA 4, CA 5, CA 8.

Approved by unanimous consent.

Parallel Algorithms

Meredith has volunteered to apply the next six papers to the WD.

Motion 7 Move to apply to the C++ working paper the proposed wording in P0452R1 (Unifying

<numeric> Parallel Algorithms).

This resolves NB comments US 161 and US 184.

Approved by unanimous consent.

Motion 8 Move to apply to the C++ working paper the proposed wording in P0518R1 (Allowing copies as arguments to function objects given to parallel algorithms in response to CH11)

This resolves NB comment CH 11.

Approved by unanimous consent.

Motion 9 Move to apply to the C++ working paper the proposed wording in P0523R1 (Wording for CH 10: Complexity of parallel algorithms).

This partially resolves NB comment CH 10.

Approved by unanimous consent.

Motion 10 Move to apply to the C++ working paper the proposed wording in P0574R1 (Algorithm Complexity Constraints and Parallel Overloads).

This also partially resolves NB comment CH 10.

Approved by unanimous consent.

Motion 11 Move to apply to the C++ working paper the proposed wording in p0467R2 (Iterator Concerns for Parallel Algorithms).

This resolves NB comments US 156 and US 162.

Favor	Opposed	Abstain
43	2	9

Motion passed.

Motion 12 Move to apply to the C++ working paper the proposed wording in P0623R0 (Final C++17 Parallel Algorithms Fixes).

This resolves NB comments US 161 and US 184.

Approved by unanimous consent.

NB Response Papers

Motion 13 Move to apply to the C++ working paper the proposed wording in P0604R0 (Resolving GB 55, US 84, US 85, US 86).

We are proposing both options A and B. This resolves NB comments GB 55, US 84, US 85, US 86.

Favor	Opposed	Abstain
49	1	4

Motion passed.

Motion 14 Move to apply to the C++ working paper the proposed wording in P0607R0 (Inline Variables for the Standard Library).

We are proposing options A and B2. This resolves NB comments FI 9 and GB 28.

Approved by unanimous consent.

Motion 15 Move to apply to the C++ working paper the proposed wording in P0618R0 (Deprecating `<codecvt>`).

This resolves NB comments GB 57, US 64, and CA 9.

Favor	Opposed	Abstain
42	2	7

Motion passed.

Motion 16 Move to revert the application of P0181R1 "Ordered By Default" This resolves FI 18.

Approved by unanimous consent.

Motion 17 Move to apply to the C++ working paper the proposed wording in P0156R2 (Variadic Lock guard).

This resolves NB comments FI 8, GB 61.

Favor	Opposed	Abstain
42	1	8

Motion passed.

Motion 18 Move to apply to the C++ working paper the proposed wording in P0599R1 (noexcept for `hash` functions).

This resolves NB comment US 140.

Approved by unanimous consent.

Motion 19 Move to apply to the C++ working paper the proposed wording in P0433R2 (Toward a resolution of US7 and US14: Integrating template deduction for class templates into the standard library).

This resolves NB comments US 7 and US 14.

Favor	Opposed	Abstain
45	0	4

Motion passed.

NB Issue resolutions

Voutilainen requested separating 2911 from motion 20.

Motion 20 Move to apply to the C++ working paper the proposed resolutions of all of the issues in P0625R0 (C++ Standard Library Issues Resolved Directly In Kona) except 2894 and 2911.

Approved by unanimous consent.

Motion 20b Move to apply to the C++ working paper the proposed resolution of issue 2911 in P0625R0 (C++ Standard Library Issues Resolved Directly In Kona).

Favor	Opposed	Abstain
26	12	15

Sutter asked if any national bodies had positions against this, and ruled that the motion passed by consensus.

Non NB comment papers

Motion 21 Move to apply to the C++ working paper the proposed wording in P0558R1 (Resolving `atomic<T>` named base class inconsistencies).

Approved by unanimous consent.

Motion 22 Move to apply to the C++ working paper the proposed wording in P0548R1 (`common_type` and `duration`).

Approved by unanimous consent.

Ranges

Motion 23 Move to apply to the Ranges TS working paper the proposed wording in P0621R0 (Ready Ranges TS Issues).

Approved by unanimous consent.

WG21 Motions

Motion 1 Move to appoint an editing committee composed of Marshall Clow, Mike Miller, Ville

Voutilainen, 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 working paper for DIS ballot.

Favor	Opposed	Abstain
55	1	0

8. WG and SG sessions continue (Saturday 8:00)

9. Closing activities (Saturday 1:00)

9.1 Confirm WG21 consensus to adopt proposals (“consent agenda”, approved without discussion if no new information)

No new information. Confirmed consensus to adopt all proposals.

9.2 PL22.16 motions, if any

None.

9.3 Issues delayed until today

None.

10. Plans for the future (PL22.16)

10.1 Next and following meetings

- 2017-07-10/15: Toronto, ON, CA (N4636)
- 2017-11-06/11: Albuquerque, NM, US (N4633)

Other meetings not finalized.

10.2 Mailings

- 2017-03-20: Post-Kona
- 2017-06-19: Pre-Toronto

Deadline for papers is 14:00 UTC.

11. Adjournment (PL22.16 motion)

Sutter moved to thank the host. Plum also thanked Maurer for helping immensely. Sutter gave

Maurer credit for carrying a projector the furthest distance.

Smith proposed that the value of `__cplusplus` should be `201703`.

Nelson thanked all the scribes.

Clow moved to adjourn, Carruth seconded. Approved unanimously.

12. Attendance

The column "WG21" designates official PL22.16 or WG21 status ("P", "A", "E", "M")

The column "PL22.16" indicates organizations eligible to vote by "V", and advisory membership by "A".

PL22.16 members

Company / Organization	NB	Representative	WG21	PL22.16
Apple		Duncan Exon Smith	A	V
Argonne National Lab		Hal Finkel	P	V
Bloomberg		John Lakos	P	V
Bloomberg	UK	Alisdair Meredith	A	
Bloomberg	UK	Dietmar Kühl	A	
Bloomberg		David Sankel	A	
Bloomberg		Alexander Beels		
Brown		Walter E. Brown	E	
Cisco Systems		Lars Gullik Bjønnes	P	V
Dinkumware		P.J. Plauger	P	V
Dinkumware		Tana Plauger	A	
Edison Design Group		John H. Spicer	P	V
Edison Design Group		Daveed Vandevoorde	A	
Edison Design Group		Jens Maurer	A	
Edison Design Group		William M. Miller	A	
Embarcadero Technologies		David Millington	A	V
Facebook		Louis Brandy	P	V
Facebook		Eric Niebler	A	
Facebook		Lee Howes	A	
Facebook		Maged Michael	A	
FlightSafety International		Billy Baker	P	V
Google		Chandler Carruth	A	V
Google		Geoffrey Romer	A	
Google		Hans Boehm	A	

Company / Organization	NB	Representative	WG21	PL22.16
Google		James Dennett	A	
Google	NL	JC van Winkel		
Google		Jeffrey Yasskin	A	
Google	UK	Richard Smith	A	
Google		Thomas Koeppe		
Google		Titus Winters	A	
Google		Tim Shen		
Google		Andrew Hunter		
GrammaTech Inc,		Aaron Ballman	P	
GreenWireSoft		Juan Alday	P	V
IBM		Paul E. McKenney	P	V
IBM	CA	Hubert Tong	A	
IBM	CA	Shuo Feng Liu		
Intel		Clark Nelson	P	V
Intel		Pablo Halpern	A	
Intel		Robert Geva	A	
Intel		Erich Keane		
KCG Holdings		Robert Douglas	P	V
Lawrence Berkeley		Bryce Adelstein-Lelbach	P	V
Lawrence Livermore		James Frederick Reus	P	V
Los Alamos National Laboratory		S. Davis Herring	A	V
LTK Engineering		Alan Talbot	P	V
Microsoft		Jonathan Caves	P	V
Microsoft		Gabriel Dos Reis	A	
Microsoft		Herb Sutter	A	
Microsoft		Stephan T. Lavavej	A	
Microsoft		Gor Nishanov	A	
Microsoft		Andrew Pardoe	A	
Microsoft		Neil Macintosh	A	
Microsoft		Casey Carter	A	
MongoDB		Adam Martin	P	V
MongoDB		Nathan Myers	A	
Morgan Stanley		Bjarne Stroustrup	P	V
NVidia		Jared Hoberock	A	V
NVidia		Michael Garland	A	
NVidia		Olivier Giroux	A	
NVidia		Boris Fomitchev		
NVidia		Sergie Nikolaev		
NVidia		Zach Laine		

Company / Organization	NB	Representative	WG21	PL22.16
Oracle		Fedor Sergeev	A	V
Perennial		Barry Hedquist	P	V
Perennial		Lawrence Crowl	A	
Plum Hall		Thomas Plum	P	V
Plum Hall	FI	Ville Voutilainen	A	
Programming Research Group		Christof Meerwald	A	V
Qualcomm		Marshall Clow	P	V
Red Hat		Jason Merrill	P	V
Red Hat	UK	Jonathan Wakely	A	
Red Hat		Torvald Riegel	A	
Ripple Labs		Howard E. Hinnant	P	V
Ripple Labs		Scott Schurr	A	
Sandia National Labs		Carter Edwards	P	V
Sandia National Labs		David Hollman		
Schonfeld Tools LLC		Wesley Maness	P	P
Seymour		Bill Seymour	P	V
Sony Computer Entertainment		Michael Spencer	A	V
Sony Computer Entertainment		Wolfgang Pieb	A	
Stellar Science		Kelly Walker	P	V
Symantec		Mike Spertus	P	V
Synopsys		Timothy Prince	A	V
University of Akron		Andrew Sutton	P	P

Other WG21 members

Company / Organization	NB	Representative	WG21
Codeplay	CA	Michael Wong	M
Mozilla	CA	Botond Ballo	M
Université de Sherbrooke	CA	Patrice Roy	M
Vollmann Engineering	CH	Detlef Vollmann	M
HSR	CH	Peter Sommerlad	M
	CH	Mauro Bianco	M
	DE	Fabio Fracassi	M
University Carlos III	ES	J. Daniel García	M
CryptoTec	FI	Mikael Kilpeläinen	M
	RU	Aleksandr Fokin	M
	RU	Anton Polukhin	M
Symantec	UK	Dinka Ranns	M
PDT Partners	UK	Jeff Snyder	M

Company / Organization	NB	Representative	WG21
Maven Securities	UK	Mathias Gaunard	M
	UK	Roger Orr	M

Participating non-members

Company / Organization	NB	Representative
University of Nice		Jean-Paul Rigault
		Kirk Snyder
Tanium		Lisa Lippincott
		Louis Dionne
VMWare		Mark Zeren
		Matt Calabrese
Kitware		Mathew Woehlke
Bob Taco Industries		Michael McLaughlin
LindenLab		Nat Goodspeed
University of Windsor		Paul Preney
Roundhouse Consulting		Pete Becker
Roli		Timur Doumler
ARM		Will Deacon