WG21 2023-01 Admin telecon minutes

ISO/IEC JTC1 SC22 WG21 N4942— 2023-01-30
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Convener: John Spicer standing in for Herb Sutter
SC22/WG21 pre-meeting telecon
Monday 2023-02-23
08:00 N.Am. Pacific Time

1 Opening and introductions

John Spicer opens the meeting at 08:02 N.Am. Pacific Time
John Spicer welcomes the participants.

We do not have enough rooms in Issaquah. Subgroups can have evening sessions. If a subgroup chooses to have an evening session, it will be treated like a normal subgroup session in terms of being able to make decisions.

1.1 Roll call of participants

Ben Craig
Bill Ash
Billy Baker
Bjarne Stroustrup
Christof Meerwald
Detlef Vollmann
Dietmar Kühl
Erich Keane
Gabriel Dos Reis
Guy Davidson
Hana Dusíková
Hans Boehm
Hubert Tong
Inbal Levi
J. Daniel Garcia
Jeff Garland
Jeff Snyder
Jens Maurer
John Spicer
Jonathan Wakely
Matthias Kretz
Michael Hava
Michael Wong
Mingxin Wang
Nathan Owen
Nina Ranns
Peter Brett
Peter Kulczycki

René Ferdinand Rivera Morell
Roger Orr
Timur Doumler
Tom Honermann

1.2 Adopt agenda

Proposed agenda as was distributed before the meeting, with the addition of SG23 report.
No objection to approval of agenda. Agenda adopted.

1.3 Approve minutes from previous meeting (deferred to face- to-face meeting)

1.4 Review action items from previous meeting (deferred to face-to-face meeting)

1.5 Review of project editor and external coordination assignments

Status page

John Spicer presents the status page.
Currently completing the NB comments for C++23 which we expect to finalize at the upcoming meeting.
Any corrections or additions ?
None.

2. Status reports

2.0 Advisory subgroup status reports

• **AG**, Admin group: Nevin Liber

We missed the December mailing, but got the January mailing out in time. We have no plans to meet in Issaquah.

• **DG**, Direction group: Bjarne Stroustrup

The DG spent most of its time (bi-weekly meetings) on "Safety." There is a new section in P2000 on balancing concerns (7.6) and a separate paper P2759R0 on safety. We focus on compatibility, the multiplicity of notions of safety, and the need for static guarantees in some areas of C++ use.
We also discussed – without any conclusions so far – the impact of the organization of WG21 on design directions. The size of the committee and the hybrid meetings increase the problems related to coherence.

• **ARG**, ABI review group: Daveed Vandevoorde, Jason Merrill

There has been no activity in ARG since the last meeting. ARG generally doesn't have "meetings" (what little business there is can be handled by e-mail), and so we have no particular plans for the Issaquah meeting.

2.1 Pipeline stage 1 groups: Specialist subgroup status reports (Sgs)

SGs 3, 8, 11 and 13 are currently dormant and handled in the main subgroups. The active SGs are:

• **SG1**, Concurrency: Olivier Giroux, Hans Boehm

SG1 is only meeting at traditional meetings now. The paper load for Issaquah is low, we expect to meet for less than half the week - we have already relinquished the other half to Jens for other SGs.

• **SG2**, Modules: David Stone

No report.

• **SG4**, Networking: Jeff Snyder, Gašper Ažman

SG4 has not held any telecons since the previous meeting. The SG has papers from Niall Douglas & Dietmar Kuehl to look at in Issaquah which, given the limited availability of rooms, we hope to get through in one or two evening sessions.

• **SG5**, Transactional memory: Hans Boehm, Jens Maurer

SG5 is currently dormant, waiting for publication of Transactional Memory TS v2. I believe some implementation work is going on in the background.

• **SG6**, Numerics: Matthias Kretz, Lisa Lippincott, John McFarlane

SG6 has not resumed telecons (and there's no plan to do so either). In Issaquah, SG6 should look at
  ● P2746 Deprecate and Replace Fenv Rounding Modes, and
  ● P2681 More Stats Functions.
  ● P1383 More constexpr for <cmath> and <complex> (depending on what happens in the next LEWG telecon, though)

SG6 is still hoping to receive more papers on numeric types, e.g. fixed-point, defined overflow behavior, units, etc.

• **SG7**, Compile-time programming: Hana Dusíková, Daveed Vandevoorde

SG7 didn't have any telecons as there was no paper addressing SG7.

• **SG9**, Ranges : Inbal Levi, Casey Carter

SG9 will meet in Issaquah at the Monday afternoon session (Feb 6th), and during an evening session in case of an overflow (both meetings will take place in the "Bergsma" room).

We will discuss the following papers (and possibly other SG9 papers which may come up during the next two weeks):

1. [P2406](#): Fix `counted_iterator` interaction with input iterators (C++23, was discussed extensively before, we will briefly go over design considerations brought up by LEWG)
2. [P2655](#): common_reference_t of reference_wrapper Should Be a Reference Type (C++23, waiting for authors' input)
3. [P2022](#): Rangified version of lexicographical_compare_three_way (C++26)

SG9 have met once since the Kona meeting, and have discussed the following papers and NB comments:

- [US#523](#): US 46-107 25.5.7.1 [counted.iterator] Too many iterator increments (forwarded to LEWG, re-discussed a design topic (time allocated for it in Issaquah))
- [DE#472](#): 26.7.6.1 [range.all.general], 26.4.5 [range.refinements] copyable and movable views (no change in recommendation, the feedback was sent to LEWG)
- [P2655](#): common_reference_t of reference_wrapper Should Be a Reference Type (C++23)

• **SG10**, Feature test: Barry Revzin, Jonathan Wakely

Nothing to report.

• **SG12**, Undefined and unspecified behavior, and vulnerabilities: Aaron Ballman, Michael Wong

SG12 has not met since the last plenary; no status update to report.

• **SG14**, Low latency: Michael Wong

Due to the short interval, we only met once since the last report (Kona F2F), where we discussed Patrice Roy's paper on collected issues from Games developers for C++. This was a continuation of the review of this paper from CPPCON 23 SG14 session, and we made further progress with the aim of developing several features of interest to Games developers. Patrice plans to publish this omnibus paper.
We are also looking for a finance, trading, low-frequency subgroup chair to fill a vacant spot after the previous chair, Staffan Tjornstrom who did great work changed jobs. We continue alternating subjects every month.

• **SG15**, Tooling: Michael Spencer, Ben Boeckel

No report

• **SG16**, Unicode: Tom Honermann, Peter Brett

Summaries of SG16 meetings held since the last pre-meeting admin telecon, with the exception of the [2023-01-11 telecon](#), are available in [P2766 (SG16: Unicode meeting summaries 2022-10-12 through 2022-12-14)](#).
Aside from one meeting devoted to a [presentation by Intel's Michael Kuperstein](#), all recent SG16 meetings have been focused on identifying consensus for recommendations for NB comment resolution. SG16 has provided recommendations on the following NB comments:

- [FR 005-134 22.14.6.4 [format.string.escaped] Aggressive escaping](#)

- - SG16 recommends to adopt [P2713 (Escaping improvements in std::format)](#).
- **FR-007-012 22.14.2.2 [format.string.std] codepoints with width 2**
  - SG16 recommends to adopt [P2675 (LWG3780: The Paper (format's width estimation is too approximate and not forward compatible))](#). as both the resolution of the NB comment and [LWG issue 3780](#).
- **FR-008-011 22.14 [format] Support formatting of thread::id**
  - SG16 recommends to adopt [P2693R0 (Formatting thread::id and stacktrace)](#).
- **FR-009-024 Annex E [uaxid] Shorten contents and integrate with [lex.name]**
  - SG16 recommends to reject this NB comment.
- **GB-031 5.2 [lex.phases] Clarification of wording on new-line and whitespace**
  - SG16 previously and separately recommended adoption of [P2348 (Whitespaces Wording Revamp)](#).
- **US 2-029 3.35 [defns.multibyte] Give context for "execution character set"**
  - SG16 recommends to resolve this issue as "not a defect".
- **US 38-098 22.14.6.4p1 [format.string.escaped] Escaping for debugging and logging**

  - SG16 recommends to adopt [P2713R0 (Escaping improvements in std::format)](#).
- **US 64-132 Annex E.4 Whitespace and pattern rules**
  - SG16 recommends to accept the NB comment.
  -

SG16 is still in discussion for the following NB comments. We will be considering forwarding [P2736 (Referencing the Unicode Standard)](#) as a resolution to them at our 2012-01-25 telecon this week.
- **FR-010-133 [Bibliography] Unify references to Unicode**
- **FR-021-013 5.3p5.2 [lex.charset] Codepoint names in identifiers**

SG16 has started discussion of the following NB comments and will continue that discussion this week. However, I do not expect us to have consensus for a recommended resolution in time for Issaquah. [P2749 (Down with "character")](#) seeks to resolve this comment. Assuming we do not have consensus to forward that paper, resolution of this NB comment will be handled by CWG where it is expected that it will be resolved as having no consensus for a change.
- **FR-020-014 5.3 [lex.charset] Replace "translation character set" by "Unicode"**

SG16 will not meet in Issaquah due to a lack of conference room availability during regular business hours.
SG16 continues to have plenty of topics on queue for discussion and will continue meeting at its regular twice a month cadence.

• **SG17**, EWG incubator: Erich Keane

Botond stepped down as the group chair just before the Kona meeting. Group currently doesn't have a co-chair.

SG17/EWGI intends to restart operations in Issaquah. We will be meeting on Wednesday, Thursday, and Friday evenings, and on Friday afternoon to try to get through the EWGI backlog.

• **SG18**, LEWG incubator: Billy Baker, Nevin Liber

SG18 LEWGI has not had meetings separate from LEWG. The chairs of SG18 will again rotate with the LEWG chairs during the Issaquah meeting.

• **SG19**, Machine learning: Michael Wong, Vincent Reverdy

We held 2 meetings since the last report (Kona F2F). We continue to progress 2 papers, Stats (P1708, P2681) and Graph algorithms(P1706) for the aim of C++26. P2681, the More Stats paper needs to be scheduled for SG6. Other papers we are looking at include Matrix multiplication. We continue alternating subjects every month

• **SG20**, Education: JC van Winkel

SG20 will not meet in Issaquah. SG20 has met a few of times as a whole but subgroups (of SG20) meet more often in work sessions, one in US-and one in EMEA friendly timezones. There we write drafts of the topics for our education guidelines which we then vote on in our plenary" SG20 meetings.
Our github repository can be found at https://github.com/cplusplus/SG20. We want to continue to steadily keep adding more guidelines.

• **SG21**, Contracts: John Spicer, Timur Doumler

Since Kona, we had two telecons: one where we discussed P2659 ("A Proposal to Publish a Technical Specification for Contracts"), and another where we discussed P2680 ("Contracts for C++: Prioritizing Safety"). Neither of these proposals got consensus. As per the current roadmap (P2695), we now move on to discuss what the semantics of side effects in contracts annotations should be; I'm currently counting four papers in the SG21 pipeline on this specific topic. This is going to be SG21's focus in Issaquah; we are currently planning two afternoon sessions (tentatively Tue PM + Wed PM) for this.

We were supposed to have a telecon today, it was canceled because of the admin call

• **SG22**, C/C++ liaison: Aaron Ballman,Thomas Koeppe, JeanHeyd Meneide, Richard Smith

SG22 has not met since the last plenary; no status update to report.

WG14 has not met since the last WG21 plenary, but will be meeting next week (week of Jan 24) for a week-long virtual meeting to resolve our NB comments for C2x. We are still on track for shipping C23, but there is a slight risk to the schedule depending on whether we can processall our NB comments next week or not.

• **SG23**, Safety and Security: Roger Orr, Ben Craig

SG23 is planning to have its inaugural meeting in Issaquah.

The study group has now been added to the paper system, we have solicited authors of existing email the paper number of any they wish to target to SG23.

We should have a clearer idea of our meeting schedule, etc., after Issaquah.

2.2 Pipeline stage 2 groups: Design subgroup status reports

• **EWG**, Core evolution: JF Bastien, David Stone, Erich Keane

P1018r19 contains details on the Kona meeting.

EWG has had one telecon since Kona.

The following NB comments were left open from Kona, but papers have not been written since Kona address them:
- Addressing FR-025-017 (wiki notes)
- Addressing US 8-036 6.6p3.2 (wiki notes)

We will prioritize discussing them, but without updated papers as were discussed in Kona we are unlikely to resolve the issues.

There are currently almost 100 papers and issues being considered for EWG and EWGI. Around 40 of these have no author or presenter who intends to be in Issaquah or attend remotely, which means that their paper will not be seen. I've reached out to all of them and will update my list.

81 papers are still marked as needing a revision. I'll need to reach out to authors to rectify this, or authors could generously rectify the problem by publishing a new version!

As of this writing, papers that will be considered for EWG are as follows (with remote presenters showing as ??? since I haven't requested timezone information yet):

P1404R1	#191	bad alloc is not out-of-memory!	Tomasz Kamiński (???)
P2670R0	#1336	Non-transient constexpr allocation	Barry Revzin
P2686R0	#1351	Updated wording and implementation experience for P1481 (constexpr structured bindings)	Corentin Jabot
P2738R0	#1431	constexpr cast from void*: towards constexpr type-erasure	Corentin Jabot
P2747R0	#1438	Limited support for constexpr void*	Barry Revzin
P2477R3	#1133	Allow programmer to control and detect coroutine elision by static constexpr bool should elide() and	Chuanqi Xu (???)
P2014R0	#750	Proposed resolution for US061/US063 - aligned allocation of coroutine frames	Lewis Baker
P2687R0	#1352	Design Alternatives for Type-and-Resource Safe C++	Bjarne Stroustrup
P2691R0	#1356	Allow referencing inline functions with internal linkage from outside their defining header unit	Herb Sutter
P2640R2	#1306	Modules: Inner-scope Namespace Entities: Exported or Not?	Nathan Sidwell (???)
P2552R1	#1212	On the ignorability of standard attributes	Timur Doumler
P2188R1	#895	Zap the Zap: Pointers should just be bags of bits	Anthony Williams (???)
P2370R2	#1056	Stacktrace from exception	Antony Polukhin (???)
P2481R1	#1137	Forwarding reference to specific type/template	Barry Revzin

[P2672R0](#)	[#1338](#)	Exploring the Design Space for a Pipeline Operator	Barry Revzin
[P1726R5](#)	[#553](#)	Pointer lifetime-end zap	Jens Maurer
[P2677R2](#)	[#1343](#)	Reconsidering concepts in-place syntax	Mike Spertus
[P0876R11](#)	[#117](#)	fiber_context - fibers without scheduler	Nat Goodspeed
[P2546R3](#)	[#1207](#)	Debugging Support	René Rivera (???)
[P2411R0](#)	[#1081](#)	Thoughts on pattern matching	Bjarne Stroustrup
[P2169R3](#)	[#878](#)	A Nice Placeholder With No Name	Corentin Jabot
[P2410R0](#)	[#1080](#)	Type-and-resource safety in modern C++	Bjarne Stroustrup
[P2641R1](#)	[#1307](#)	Checking if a union alternative is active	Barry Revzin
[P2593R1](#)	[#1251](#)	Allowing static_assert(false)	Barry Revzin
[P2621R1](#)	[#1283](#)	UB? In my Lexer?	Corentin Jabot
[P2741R0](#)	[#1434](#)	user-generated static_assert messages	Corentin Jabot
[P2758R0](#)	[#1445](#)	Emitting messages at compile time	Barry Revzin
[P2558R1](#)	[#1220](#)	Add @, $, and ` to the basic character set	Steve Downey
[P2141R0](#)	[#885](#)	Aggregates are named tuples	Antony Polukhin (???)
[P2120R0](#)	[#841](#)	Simplified structured bindings protocol with pack aliases	Barry Revzin
[P1061R3](#)	[#294](#)	Structured Bindings can introduce a Pack	Barry Revzin
[P2662R0](#)	[#1329](#)	Pack Indexing	Corentin Jabot
[P2748R0](#)	[#1439](#)	Disallow Binding a Returned glvalue to a Temporary	Brian Bi
[P2750R0](#)	[#1440](#)	C Dangling Reduction	Jarrad Waterloo (???)
[P2742R0](#)	[#1435](#)	indirect dangling identification	Jarrad Waterloo (???)
[P2740R0](#)	[#1433](#)	Simpler implicit dangling resolution	Jarrad Waterloo (???)
[P2730R0](#)	[#1424](#)	variable scope	Jarrad Waterloo (???)
[P2724R0](#)	[#1421](#)	constant dangling	Jarrad Waterloo (???)

If you think a paper is missing from the EWG list, please reach out to me and Erich privately.

• **LEWG**, Library evolution: Bryce Adelstein Lelbach, Fabio Fracassi, Ben Craig

We've been looking at issues and C++26 material. We will continue working through C++23 issues.

2.3 Pipeline stage 3 groups: Wording subgroup status reports

• **CWG**, Core wording: Jens Maurer

CWG status report:

We are having three teleconferences between Kona and Issaquah for residual NB comment processing and general issues processing.

There are still a few NB comments in progress, which we will process as they materialize in CWG's inbox. Beyond that, we will make a first pass on C++26 papers and continue with issues processing as time permits.

List of papers:

https://github.com/cplusplus/papers/issues?q=is%3Aissue+is%3Aopen+label%3Acwg

• **LWG**, Library wording: Jonathan Wakely, Jeff Garland, Dietmar Kuehl

LWG had a very productive meeting in Kona, but immediately after the meeting and over the end of year we canceled the weekly telecons we've been doing since mid-2020. We've resumed weekly telecons now, reviewing C++26 papers and library issues, because we were waiting for LEWG to tell us which C++23 ballot comment material we should review. There is a second weekly LWG telecon where a small group is working through the P2300 proposal. One of the goals has been to identify smaller pieces which might be separable from the rest of P2300 so they can be reviewed and approved as self-contained features.

LWG will be meeting all week in Issaquah, concentrating on C++23 ballot resolution. I will be attending remotely again, relying on my very capable assistant chairs to keep the room in order.

Jonathan Wakely : We're currently blocked on C++23 issues due the lack of polls from LEWG. We could have made progress over the last couple of weeks if we had the poll results.

Michael Wong : We were trying to find the LEWG poll results too, but couldn't find them.

Jonathan Wakely : The polls were taken, but the results are not available yet.

Ben Craig : I don't have the poll results, but will check with Bryce.

2.4 SC22 report

No report.

2.5 SC22/WG14 (C) report (covered in 2.1 / SG22)

3. New business

3.1 Review of priorities and target dates

• Status page
• P1000

Priorities : Review NB comments and start the DIS ballot.

3.2 Any other business

Nina Ranns : New minutes of the meeting have been released but are not included in the mailing yet. The changes are contained to the attendance list. They are attached to the wiki.

John Spicer : The agenda for the Issaquah meeting has been posted.

Jens Maurer : Lunch will be sponsored and provided at the hotel. The afternoon break is at 3:15.

Tom Honermann : We had an issue with this admin meeting when it comes to finding the zoom link and password. Can we add it to the shared calendar ?

Peter Brett : second that request. Additionally, if a meeting is canceled, can you please remove it from the shared calendar ?

Tom Honermann : For the mattermost, I will reach out to James Reardon to apply any updates before Issaquah. If there are any requests to use it differently to how it was used in the last meeting, please let me know.

Jens : We have a high attendance vs space available in Issaquah. Wiki page has the final assignment of conference rooms to study groups. There will be a continental breakfast provided an hour before the meeting. The hotel offers cooked breakfast too, but you will need to pay for it.

4.1 Review and approve resolutions and issues

No discussion

4.2 Review action items

Ben Craig : check with Bryce about the LEWG poll results.
Herb Sutter : add the admin meeting to the shared calendar.
Nina Ranns : send an email asking for missing subgroup reports.

5. Closing process
5.1 Establish next agenda

John Spicer : I propose the same agenda with the SG23 subgroup report added. Any objections ?
Jens Maurer : I would like to add a logistics agenda item.

Hubert Tong : Is there a standard time for evening sessions in Issaquah ?
Jens : Yes, it is 7:30pm -10pm. That information is also available on the wiki.

5.4 Adjourn

Any objections to adjournment?
None.
Meeting adjourned at 08:40 N.Am. Pacific Time