

WG21 2022-10 Admin telecon minutes

ISO/IEC JTC1 SC22 WG21 N4924— 2022-10-31
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Convener: Herb Sutter
SC22/WG21 pre-meeting telecon
Monday 2022-10-24
08:00 N.Am. Pacific Time

1 Opening and introductions

Herb Sutter opens the meeting at 08:02 N.Am. Pacific Time
Herb Sutter welcomes the participants.

1.1 Roll call of participants

Aaron Ballman
Barry Revzin
Billy Baker
Bjarne Stroustrup
Christof Meerwald
Detlef Vollmann
Dietmar Küh
Erich Keane
Fabio Fracassi
Gabriel Dos Reis
Hal Finkel
Hans Boehm
Herb Sutter
Hubert Tong
Jeff Snyder
Jens Maurer
John Spicer
Jonathan Wakely
Marco Foco
Matthias Kretz
Matus Chochlik
Michael Hava
Michael Spencer
Mingxin Wang
Mitsuhiko Kubota
Nevin Liber
Nina Ranns
Olivier Giroux
Peter Brett
René Ferdinand Rivera Morell
Roger Orr

Bill Ash
Tom Honermann
Ville Voutilainen

1.2 Adopt agenda

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](#)

Status page has not been updated since the last meeting.

Any corrections or additions ?

None.

2. Status reports

2.0 Advisory subgroup status reports

- **AG**, Admin group: Hal Finkel/Nevin Liber

We had a regular set of activities regarding mailing and document server. Pre meeting mailing is out. I tried to get it out soon after the deadline. There will be an update to the mailing in the next couple of days. We have more papers than in recent mailings. There are a number of outstanding issues regarding future updates to the website and other infrastructure related improvements.

I expect the admin group will meet in Kona and have an agenda discussing all those items. My plan is to step down as the chair in Kona and Nevin Liber will take over.

John Spicer : I want to thank you Hal for leading this group. It's revolutionized the way we deal with papers.

Nevin Liber : Are we doing a mailing right after the meeting?

Herb Sutter : Normally it's on the 15th of every month.

Nevin Liber : We haven't had a face to face meeting since we introduced that process.

John Spicer : I think the post meeting mailing is probably December, but that doesn't mean we won't have a November mailing.

Herb Sutter : We don't expect editors to create new working drafts for the mailing immediately after the meeting.

- **DG**, Direction group: Roger Orr

The Direction Group has continued to meet approximately every two weeks. The main matter we have been discussing is the recent focus on the perception of safety in C++ and other programming languages. We have issued a revision of P2000 to include some paragraphs with a few overall thoughts about this.

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

There has been no ARG activity since the last plenary.

- **SSRG**, Safety/security review group: Gabriel Dos Reis

No meeting since July; no referral.

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 has not met recently, we're meeting in Kona.

There aren't a large number of papers so I expect we will not meet the whole week. We'll focus on meeting in the mornings so that remote attendees have a better schedule.

Herb Sutter : I noticed you are not planning to meet the whole week in Kona. Is that likely to be the case in the February meeting?

Olivier Giroux : I don't know. I'm hoping to have the same cadence as before the pandemic.

Herb Sutter : we're trying to see how we can organize rooms for the February meeting.

Olivier Giroux : We will have a better idea in January.

Ville Voutilainen : There was going to be a proposal to standardize SIMD proposal. Do you see any reason for SG1 to review it ?

Olivier Giroux : I don't think so, unless there are changes that are material to us. We spent a lot of time on the TS.

Matthias Kretz : there was a paper in the mailing that addresses SG1 specific questions related to the proposal. There are more papers from Intel on that.

- **SG2**, Modules: David Stone

No report.

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

SG4 has one paper from Niall Douglas to look at, but we decided (with author and Chair) to postpone the discussion till the next meeting and will not be meeting in Kona due to quorum and in-person attendance issues.

Thank you to Gašper Ažman for stepping up as the assistant chair.

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

N4923 is the TM TS2 draft with ballot resolutions applied. Now we just need to get it published. We have no other pending papers, and hence there have been no substantive discussions in SG5.

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

SG6 did not meet since the last plenary, for lack of papers. However, we joined LEWG for one telecon (2022-09-13) to talk about:

- P0870R4: Type trait to detect narrowing conversions
- P2614R0: Deprecate numeric_limits::has_denorm
- Numerics TS Planning

The last item was based on past activities (and papers) that have stalled. At this point we still don't have new papers or revisions for Kona on the topic of numeric types.

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

No activity since the last plenary.

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

SG9 has met two times since the last plenary meeting and reviewed: D1255R8, P2602R0, LWG3714, P2655R0, P2542R2, P1684R3

We will meet in Kona (a hybrid meeting, which will allow remote participation) on Tuesday, and discuss ranges-related NB comments.

The full comments list and details of the meeting are updated on SG9's [page](#).

We invite anyone who has input to join.

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

We're updating our standing document. Nothing else to report (no meetings past or future).

- **SG12**, Undefined and unspecified behavior, and vulnerabilities: Gabriel Dos Reis, Aaron Ballman, Michael Wong

No meeting since July.

- **SG14**, Low latency: Michael Wong

SG14 continues its normal cadence of 1 meeting a month on the second Wednesday at 2 pm ET as it has for the last 7 years skipping March and November due to DST madness.

We just published 2022 minutes for virtual calls in P2683r0, and held a F2F at CPPCON with minutes in the edg wiki under virtual 2022

Since the shutdown, this has given us a chance to focus on each SIG at each meeting. Attendance is usually 20-30.

We focused on low latency in our latest session with likely more further discussions to come. We have been focusing on a Games omnibus paper, not published yet, collecting the concerns of the Games community by Patrice Roy.

The most recent rotation schedule is:

- No call Nov due to Kona F2F:
- Dec 7, 2022 02:00 PM ET Games
- Jan 11, 2022 02:00 PM ET: Embedded
- Feb 8, 2022 02:00 PM ET: Finance/low Latency
- Mar 8, 2022 02:00 PM ET: Games

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

SG15 has been meeting almost every 2 weeks with between 6 and ~12 attendees. We have been focusing on modules and build systems.

We have been looking at these papers:

- P2673 - Common Description Format for C++ Libraries and Packages
Approved supporting this effort
- P2581 - Specifying the Interoperability of Binary Module Interface Files
We've mostly gotten people on the same page on this topic

We will be meeting at Kona to discuss P2581 and P2656 (C++ Ecosystem International Standard).

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

SG16 has held 6 telecons since the last pre-meeting admin telecon on 2022-07-11; we continue to (mostly) sustain our twice monthly meeting cadence. Attendance has ranged from 7 to 13 participants with an average of 8.

Summaries of most SG16 meetings held since the last pre-meeting admin telecon are captured in [P2678 \(SG16: Unicode meeting summaries 2022-06-22 through 2022-09-28\)](#); summaries for meetings held on 2022-10-12 and 2022-10-19 are available [here](#) and will be published in a future paper.

SG16 is currently focused on reviewing and preparing positions on draft C++23 NB comments.

Papers discussed include:

- [WG14 N3016: Unicode Length Modifiers v3](#)
 - Further review of this paper is pending an updated revision.
- [P2626: charN_t incremental adoption: Casting pointers of UTF character types](#)
 - [GitHub issue #1289](#)
 - Further review by SG16 is needed before this paper is ready for review by other WGs.

LWG issues discussed include:

- [LWG #3767: `codecvt<charN_t, char8_t, mbstate_t>` incorrectly added to locale](#)
 - [GitHub issue #1310](#)
 - SG16 recommendations have been recorded in the GitHub issue; further action awaits LWG.
- [LWG #3412: `§\[format.string.std\]` references to "Unicode encoding" unclear](#)
 - SG16 established consensus for direction; further action awaits proposed wording.

SG16 currently has [three papers ready for review](#), two of which target C++23 NB comments.

We will not meet in Kona. We are focusing on NB comments, so we would like to ask NB chairs to post the drafts of their comments on the wiki so we can get started on those. That would be very helpful.

Hubert Tong : can someone post the link to where the uploads are.

Herb Sutter : It's on the Kona wiki document page. Some NB are still collating the comments.

- **SG17**, EWG incubator: Botond Ballo, Erich Keane

Our main concern for Kona meeting is quorum. At the moment we don't have any plans to meet in Kona.

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

We currently don't have plans to meet during Kona. LEWG will have a discussion tomorrow on what will happen in Kona.

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

SG19 continues its normal cadence of 1 meeting a month on the second Thursday at 2 pm ET as it has for the last 4 years skipping March and November due to DST madness.

We just published 2022 minutes for virtual calls in P2684r0, and held a F2F at CPPCON with minutes in the edg wiki under virtual 2022.

Since the shutdown, this has given us a chance to focus on each SIG at each meeting. Attendance has been increasing now to 10-15.

We have been progressing with the Stats P1708 paper through LEWG.

We are now working on Graph P1709 as well as More Stats paper ready for SG6.

We will continue rotation for the other proposals with Graph nearing completion, planned for early 2023.

The most recent rotation schedule is:

- Nov 10, 2022 02:00 PM ET: Canceled due to Kona F2F
- Dec 8, 2022 02:00 PM ET: Graph
- Jan 12, 2023 02:00 PM ET: Stats
- Feb 9, 2023 02:00 PM ET: Matrix, RL and DC
- Mar 9, 2023 02:00 PM ET: Graph

- **SG20**, Education: JC van Winkel

SG20 has been meeting a couple of times. We have also run a number of "subgroup" working sessions defining teaching topics. The results can be found on github at <https://github.com/cplusplus/SG20>. The guidelines as work in progress can be seen at <https://cplusplus.github.io/SG20/latest>

SG20 will not meet in Kona.

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

In my last report I said:

"There is currently an issue that is blocking our progress concerning the kind of side-effects that are permitted in contracts.

There remain quite a few issues regarding side-effects in contracts. Those include how many times a side-effect is permitted and/or guaranteed to occur.

The issue that is currently blocking progress concerns whether contracts should forbid certain classes of operations because allowing them might be a code-safety issue."

We now have the paper from Gabriel Dos Reis (P2680R0), and we have tentative plans for a hybrid meeting in Kona to discuss issues from the paper and other issues.

The current draft of the Contracts Working Paper is P2521R2 dated 2022-03-15.

Thank you to Timur for stepping up as the co-chair.

Peter Brett : why did SG21 not meet for more than 6 months this year ?

John Spicer : We needed input to move forward as we were blocked on an issue.

Bjarne Stroustrup : Is the termination still the only possible exit from a violation at run time ?

John Spicer : For the minimal proposal as the first step, I believe that's the only thing that's being considered. We want a minimum subset that we can all agree on and which does not preclude additions at later point in time. We expect to have other ways of termination eventually

Bjarne Stroustrup : I do not consider that to be a minimum subset.

John Spicer : I encourage you to write a paper and it will be considered.

Michael Hava : There are papers scheduled in EWG for a Contracts TS (based on C++ 20 contracts?) - is this coordinated with SG21?

John Spicer : I have no knowledge of those papers. I looked yesterday for papers directed for SG21 and didn't find any.

Erich Keane : I'll send an email to JF to forward them to SG21

Roger Orr : papers are P2659R0, P2660R0, and P2661R0

Gabriel Dos Reis : I want to thank John Spicer for fruitful conversations in trying to move things forwards. It has helped crystallize my concerns.

- SG22, C/C++ liaison: Aaron Ballman, Thomas Koeppen, JeanHeyd Meneide, Richard Smith

SG22 has met twice since the July plenary, but has continued to struggle with quorum issues. The group will often have ~5-10 people attending, but the mixture of committee representatives is often such that we only have sufficient folks from one committee or the other.

One of the two meetings had a quorum, but the paper authors were unable to attend at the last minute. We will convene an ad hoc meeting to address any NB comments that deal with C and C++ compatibility from either the WG21 CD ballot or the WG14 CD ballot (when it goes out).

WG14 Liaison Report

WG14 has met once since the last WG21 plenary, and it was the last meeting at which changes for C2x were accepted. There were 37 papers adopted at our last meeting, including a significant amount of C++ compatibility work such as `auto`, `constexpr`, `nullptr`, and scoped enumerations. Additionally, we voted to send TS6010 (a technical specification on nailing down the C memory object model more tightly) for balloting. Relevant changes since the last WG21 plenary include:

N2940: Removing trigraphs

N2974: Queryable pointer alignment

N2975: Relaxed requirements for variadic parameter lists (allows `void f(...);`)

N3017: #embed

N3020: Qualifier-preserving standard library functions

N3007: Type inference for object definitions

N3018: The constexpr specifier for object definitions

N2956: Unsequenced functions (function type attributes)

N3033: Comma omission and comma deletion (__VA_OPT__)

N3029: Improved normal enumerations

N3030: Enhanced enumerations (scoped enums)

N3042: Introduce the nullptr constant

Our project editors are preparing the CD ballot document. Due to the amount of editorial work involved in preparing for the ballot, WG14 is asking ISO for an extension to our target dates, so the CD ballot is now expected to go out by mid-Jan 2023 at the latest. The latest C working draft can be found at:

<https://www.open-std.org/jtc1/sc22/wg14/www/docs/n3047.pdf>

Peter Brett : Do we anticipate any problems where C23 has standardized things for which there are disagreements in WG21, like embed ?

Aaron Ballman : embed is the only thing that comes to mind, we hope they will not diverge the preprocessor for this feature.

Peter Brett : Is that the only area where you anticipate issues ?

Aaron Ballman: There may be minor issues bringing compound literals to C++. The hopes are that everything else is going to be compatible. WG14 just opened the CD stage for comments, so if anyone does spot compatibility concerns they're worried about, they are encouraged to file an NB comment against the C2x CD (comments are due by Nov 18)

Tom Honerman : Do we need to give a response to NB comments in the February meeting?

Herb Sutter : That is our self imposed schedule. We try to address most of them in the first meeting, and finalize everything in the second.

Gabriel Dos Reis : is it correct that we only have NB comments at this stage and we vote on the final draft ?

Herb Sutter : Voting and giving comments at the same time was confusing. We had to remind people that you don't have to vote 'NO' to give your NB comments higher priority. We always

asked to let us know your concerns as early as possible. Now you can't vote at all, just give comments. This is a ballot for comments, and the DIS is the ballot for approving.

2.2 Pipeline stage 2 groups: Design subgroup status reports

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

The current EWG status is available here: <https://isocpp.org/files/papers/D1018R18.html>
I'll make sure it's in the next mailing as P1018r18.

Otherwise, I've started emailing EWG with a tentative plan, you will find the latest plan here:
<https://lists.isocpp.org/ext/2022/10/19870.php>

I will continue to send updates to the plan in the next weeks.

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

We have met regularly since July, mostly about stuff from LEWG, and we started working on C++26. We are front loading the heavy items we want to land early. We will have a planning meeting tomorrow to make our schedule in Kona. If you are interested, please join the meeting tomorrow.

2.3 Pipeline stage 3 groups: Wording subgroup status reports

- **CWG**, Core wording: Jens Maurer

The Core Working Group continues to have a teleconference for two hours every two weeks, and has been processing mostly core issues.

The current core issues list is available at

https://wiki.edg.com/pub/Wg21telecons2022/CoreWorkingGroup/issues_list.zip

and contains 26 issues in "Ready" status, with more expected as a result of the deliberations of the Kona meeting.

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

LWG took a break after the July telecon. We resumed weekly teleconferences in late August, but we now meet on Wednesdays instead of Fridays. We have been processing some papers that missed the C++23 deadline but are likely to be requested in NB comments. We've also been doing lots of issue processing, and have triaged some of the NB comments that were shared early.

LWG will meet in Kona, attempting a hybrid set up. I will be remote, so Jeff Garland and Dietmar Kuehl will be running the sessions. We expect to spend the majority of the meeting processing ballot comments, and maybe some library issues too.

There will be a straw poll in Kona to publish the Library Fundamentals TS v3. After that we expect to stop working on the Library Fundamentals TS, it's very unlikely there will be a v4.

2.4 SC22 report

The appointment of the convener has been approved.

The clock on Library Fundamentals 3 has expired. The question was whether to have an extension, or to cancel and restart it. In consultation with the LWG and LEWG chairs, we decided to cancel it and will open up a new bucket after Kona.

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](#)

We're doing our first NB comment resolution meeting in Kona, the second will be in February.

3.2 Any other business

Tom Honermann : I want to raise a discussion of P2263R1 (A call for a WG21 managed chat service) with a goal of approving roll out of the existing Mattermost service hosted at <https://chat.isocpp.org> to all WG21 members in advance of the Kona meeting; I think it will be very useful to have a common persistent modern accessible chat service available to all participants whether on-site or remote. I recently updated the Mattermost Evaluation page on the WG21 wiki to align with the new paper revision.

The major change in R1 is that, following the CoC changes imposed on WG21 earlier this year by the ISO, the proposal no longer includes specific CoC or moderation policies. This is intended to align with ISO's Guidance and Process For Addressing Misconduct and Breaches of the Code of Conduct document; CoC concerns should be addressed as described in that document. I expect the lack of assigned channel moderators to be a concern for at least some WG21 members. It may be useful to discuss what we can do in terms of moderation without bumping up against the ISO's documented CoC procedures.

Bjarne Stroustrup : We have so many communication channels, and it's really hard to keep up. I hope participation in this new service is not mandatory.

Tom Honermann: We do not expect the participation to be compulsory.

John Spicer : Are we using Mattermost instead of Slack for cost issues ?

Tom Honermann : Yes, we have Mattermost hosted on C++ foundation architecture so we have full control of it, and there are no licensing costs associated with it unless we decide to opt-in to additional features. We do not believe we will need those features.

Ville Voutilainen : I have been using that service to communicate with other WG21 members. It is not a replacement for anything, but it is a useful addition. This chat is useful if we get a reasonable number of committee members reachable through that.

Herb Sutter : Hal/Nevin can you coordinate this with Tom including notifying the rest of the committee ?

John Spicer : It will be helpful to have some clear guidance on when we should use which service.

Tom Honermann : We can do that on this [wiki page](#).

Herb Sutter: we should make sure it is clear that it is optional to use these services.

Tom Honermann : I'm expecting that we can moderate the service.

Herb Sutter : Reach out to Bill if you have any questions regarding ISO CoC rules.

Peter Brett : I believe ISO rules say it's reasonable to raise issues with the committee officials.

Herb Sutter : The rules are intended to say that if you need assistance approaching another person, someone can help you and go with you, but it's still about working issues one on one.

Peter Brett : CoC rules make it clear that this service is not going to be suitable for me to use.

Tom Honermann/Herb Sutter : Does that mean you will not be using the mailing lists any more? The rules we follow are the same for both.

Peter Brett : I already have a problem with the mailing lists.

Bill Ash : I agree that the rules are intended to mean you should work out issues with the individuals involved, and seek assistance if you're feeling uncomfortable. If that doesn't solve the problem, you can raise any concerns about anyone's behavior within ISO, and that includes mailing lists and social media, to your NB.

John Spicer : The proposed rules here make it equivalent to the rules we already follow in all other places. The ISO rules are there to facilitate the communication between individuals and not to act as authority on what happens.

Tom Honermann : Peter, it would help if you try out the service and raise any issues you find concerning so we can address them.

Hubert Tong : I note that the nature of chat services in terms of private channels and direct messages is more problematic than email. In emails you have something stored, and chats may disappear. I am concerned about that.

Herb Sutter : If we find problems using this service, we will pull the plug. We expect everyone to behave professionally. Thank you to Tom for looking into all of this and putting it into motion.

Tom Honermann : Nevin/Hal, we need to schedule a time to talk about this. Do you think it's possible to roll this out in time for Kona?

Nevin Liber : Yes, we should schedule a time to talk. I do not see any problems at the moment in having this rolled out for Kona.

John Spicer : We continue to emphasize to people that we expect everyone to behave professionally and respectfully in all contexts when dealing with other committee members. Some contexts may make it easier for people to violate those rules, but that doesn't mean we should abandon those contexts. The expectation is that all communication is professional and respectful.

Hubert Tong : I was hoping that US comments would be posted soon.

Tom Honermann : I emailed Barry last night about putting them up.

4.1 Review and approve resolutions and issues

No discussion

4.2 Review action items

Erich Keane to talk to JF Bastien and forward SG21 papers to John Spicer.

5. Closing process

5.1 Establish next agenda

Herb Sutter : I propose the same agenda with the minor changes discussed.. Any objections ?
No objections.

Proposal accepted.

5.2 Future meetings (deferred to full meeting)

5.3 Future mailings (deferred to full meeting)

5.4 Adjourn

Any objections to adjournment?

None.

Meeting adjourned at 10:29 N.Am. Pacific Time