WG21 2021-02 Admin telecon minutes

ISO/IEC JTC1 SC22 WG21 N4883 — 2021-02-08

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Convener: Herb Sutter
SC22/WG21 pre-meeting telecon
Monday 2021-02-08
08:00 N.Am. Pacific Time

1 Opening and introductions

Herb Sutter opens the meeting at 08:04 N.Am. Pacific Time

1.1 Roll call of participants

Aaron Ballman
Barry Hedquist
Ben Craig
Billy Baker
Bjarne Stroustrup
Botond Ballo
Bryce Adelstein Lelbach
Christof Meerwald
Detlef Vollmann
Erich Keane
Fabio Fracassi
Gabriel Dos Reis
Hal Finkel
Hana Dusíková
Hans Boehm
Herb Sutter
Hubert Tong
Inbal Levi
JC van Winkel
Jeff Snyder
Jens Maurer
JF Bastien
John Spicer
Jonathan Wakely
Marco Foco
Michael Hava
Michael Spencer
Michael Wong
Mitsuhiro Kubota
Nevin Liber
Nina Ranns
Olivier Giroux
Peter Brett
Peter Kulczycki

Robert Douglas
Roger Orr
Thomas Köppe
Tom Honermann
Vassil Vassilev
Ville Voutilainen
William Miller
JC van Winkel

1.2 Adopt agenda

Herb Sutter adds review of CoC to the agenda.

No objection to approval of agenda with the new item. Agenda adopted.

1.2.5 Review of Code of Conduct

Herb Sutter presents the CoC slide. Herb reminds of respectful behavior.

Herb presents slide which contains the summary of the CoC discussion within the WG21 group.

Nevin Liber : Should we be showing these slides in the subgroup meetings.

John Spicer : People should be reminded of the CoC, but I do not believe it is necessary to go through the slides in the subgroup meetings.

Herb Sutter : the ISO rules apply to our full plenary meetings. It's good to have a link to the CoC guidelines in our subgroup agendas, and if you can display the slide, that's great.

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 liaison assignments

Status page

Herb presents. Thomas Köppe has taken over from Richard Smith as our project editor.

2. Status reports

2.0 Advisory subgroup status reports

• **DG**, Direction group: Daveed Vandevoorde

Michael Wong presents. Daveed Vandevoorde has taken over as the chair of DG.

DG has been watching carefully to see if we are fulfilling most of C++23 plan set out in P0592. We are seeing progress, but are still a bit concerned. In general we have been discussing topics like C/C++ joint work, ABI, overall tempo and pace of telecons.

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

Ville Voutilainen : there has been no business to conduct in the ABI group.

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

SGs 3, 8, 9, and 11 are currently dormant and handled in the main subgroups. The active SGs are:

- **SG1**, Concurrency: Olivier Giroux

Olivier Giroux presents.

We met 3 times since the last plenary. We have very few papers. When we have papers we meet. Jared, the editor of larger SG papers, has decided to take a break. We're trying to find new people to work on the executors working draft.

- **SG2**, Modules: David Stone

No report.

- **SG4**, Networking: Jeff Snyder

Jeff Snyder presents.

We met 3 times since the last plenary. We've been discussing 2 papers related to reconciling executors design with the Networking TS. We are planning on producing a paper which will contain networking TS re-based on C++20 and amended by papers approved at the SG4 level. We do not plan to have another revision of the Networking TS at the moment.

Secure networking - no update to the relevant paper since we last reviewed it. We expect to see an update, it is not abandoned.

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

Hans Boehm presents.

SG5 has been meeting regularly every 4 weeks. We have been reviewing the transactional memory light proposal, We believe we need to make it a little less light in order to make it usable. We're headed back to EWG with that proposal.

- **SG6**, Numerics: Lisa Lippincott

No report.

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

Hana Dusíková presents.

We met 2 times since the last plenary. We discussed P2237. We have been focused on syntax lately. There is a paper coming to address slicing and certain other facilities which we hope will help find a compromise to build on.

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

Ben Craig presents.

SG10 has not met. Most of SG10 business has been done as a preliminary review on the mailing list.

• **SG12**, Undefined and unspecified behavior, and vulnerabilities: Gabriel Dos

Reis

Gabriel Dos Reis presents.

There has been no activity in SG12.

• **SG13**, HMI and I/O: Roger Orr

Roger Orr presents.

We had no papers targeting SG13 and have not met.

• **SG14**, Low latency: Michael Wong

Michael Wong presents.

We met twice since the last meeting. SG14 has exited the std::colony paper which is highly anticipated by a lot of people. It has already been reviewed by LEWG and some of the other group chairs. Two papers on linear algebra have been progressing. We are still looking at ring-buffer as well as paper on embedded deterministic exception for embedded systems. This month we will focus on embedded programming. We had a security review in December, and we are discussing a security group internally with various chairs in terms of composition and leadership.

Herb Sutter : we will likely form a safety and security group. We are looking for a suitable chair and are still working out other details.

• **SG15**, Tooling: Michael Spencer

Michael Spencer presents.

Nothing to report. We have one paper to get to.

• **SG16**, Unicode: Tom Honermann

Tom Honermann presents.

SG16 met once during November and December, but we have since resumed to meeting twice a month. Meeting invites going forward will not contain agendas to speed up sending out invites. Lots of work and papers to pursue. There are 3 SG16 papers in the EWG elec-

tronic polling, and there are more SG16 papers entering EWG and LEWG pipelines. We are currently focused on core language concerns, but are staring to look at library. Peter Brett has been a great help to SG16.

We would love to have additional participants. We are heavily focused in US and Europe, if anyone else can participate outside of those areas would be of great help.

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

Botond Ballo presents.

SG17 has not been meeting. Mixture of design level and incubation level review is happening in EWG at the moment.

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

Billy Baker presents.

SG18 has not been meeting. LEWG is taking up our work.

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

Michael Wong presents.

SG19 is meeting monthly. We have exited the simple statistical function paper P1708 after 2 years of hard work. We are requesting SG6 and LEWG to review it. This paper will build foundation for further machine learning. Implementation has 2 prong approach and we are interested in getting feedback.

Differential calculus has a direction and a new candidate. We reviewed Enzyme in the last meeting.

We also have graph proposal for machine learning which is based on boost graph library. It will be reviewed this week and potentially be ready to exit in a reduced form. Major proposals take many years to mature. We are trying to make lighter, smaller proposal with just enough of functionality so people can build on top of them

We are also working on reinforcement learning.

Every month we can discuss one proposal.

Bjarne Stroustrup : did you say boost graph library?

Michael Wong : it's the new improved version.

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

JC van Winkel reports .

We have been meeting in January. We are making slow but steady progress on how to teach specific topics. We are meeting once every 6 weeks.

- **SG21**, Contracts: John Spicer

John Spicer presents.

We met in January and have a meeting in February. We're working on defining minimal viable feature set that can meet meaningful set of needs while avoiding some of the controversial things that weighed down the previous proposal. One of the requirements is that it not foreclose future development to address things we are not addressing now. Our goal is to try in the next meeting or two to come upon agreement on the specifics of a minimal viable future set. We are trying to clarify the programming model that we had in mind and how we envision it to be used. After that, we will begin to flush it out into a proposal that can be reviewed by the larger portion of the committee.

- **SG22**, C/C++ liaison: Aaron Ballman

Aaron Ballman presents.

SS22 is just getting started. We have our first meeting tomorrow. The plan is to focus on things that are expected to be in C++23 or C23 and come up with recommendation on those papers sooner rather than later. There are some farther reaching papers on coming up with a unified base of C and C++. This is really important for us to discuss, but is unlikely to impact the 2023 time frame for either committee, so those papers will be de-prioritised to make sure we don't cause any issues with ship vehicles.

The C committee is currently targeting C23. We are likely to be on the same schedule between the two committees for this release at least.

Herb Sutter : for administration reasons, C committee has a working group of the same name with the same chair and membership.

Ville Voutilainen : SG22 meeting as at the same time as LEWG.

Aaron Ballman : yes, we will address that.

Herb Sutter : it's difficult to avoid conflict.

JF Bastien : we should make sure everything is on the shared calendar.

John Spicer : it makes life easier if we have a regular pattern.

Herb Sutter : all of WG21 plenaries are in the calendar. if you have a meeting during those times, please skip it. You can also email me if you have a better suggestion.

2.2 Pipeline stage 2 groups: Design subgroup status reports

- **EWG**, Core evolution: JF Bastien

JF Bastien presents.

EWG has published a report. Please see P1018R8.

It has information on the upcoming polls. Do your homework on what you want to vote for, and then please go vote.

Herb Sutter : Is this the paper that we started a few meetings ago that is supposed to be a heads up to everyone on what is going to go to Core and then plenary, in case they want to review an upcoming feature ?

JF Bastien : yes. Because of the pandemic, this is also an advanced head up for the EWG polls.

Herb Sutter : There has been a lot of discussion on what to do during the pandemic when it comes to progress features to the plenary and into the working draft. That discussion continues. We have people to get work done, let's do the work that we can. Concern is that some key participants can't participate, and that some features may require f2f discussion. We are still looking into what we can do to improve. Please raise any concerns you have about a specific feature with EWG and DG as early as you can. Note that due to the pandemic, any request for a feature to not progress without a f2f meeting is likely to prevent that feature being ready for C++23.

Peter Brett : several papers were discussed in the most recent UK national body meeting. We wanted to say how important we view the progress of small high value papers through the pipeline. We are hopeful that EWG and CWG will continue making progress on the small papers.

• **LEWG**, Library evolution: Bryce Adelstein Lelbach

Bryce Adelstein Lelbach reports.

We are in a similar situation as EWG, in the process of taking electronic polls. There are two separate poll forms that are currently running, one for LEWG one for EWG . If you go to P2289 you can see the polls.

There are 9 items that we are voting on this time. Most of the poll should have consensus. There is a poll on any_invocable naming. Last time we had consensus, and the electronic poll is asking for consensus. My anticipation there will be consensus.

We are meeting once a week, with a break in December. We have not had any movement in LEWG on 4 major priorities since the last plenary. Executors team is working on updating the paper based on the last polls. I expect we will have a new revision of the executors some time this Spring. We have another revision of std::generator paper scheduled for end of this month or begging of the next month.

This month we will be meeting on Tuesdays, we will return to the normal schedule on the end of the month

Our backlog is roughly the same as it was for the past year or so. We have about 15-25 outstanding papers; about 5-10 of those are for the main group and the rest are in incubation phase.

Thank you to all of the vice and assistant chairs, especially Corentine and Inbal who have been running our mailing-list reviews. These have been very successful and have allowed us to progress outside of our telecons.

Herb Sutter : you mention P2289, but I can not find it.

Bryce Adelstein Lelbach : the paper is not in the mailing yet, but you can get to it directly with the link provided.

Herb Sutter : is this going to be a stable paper number ?

Bryce Adelstein Lelbach : No. This is just a paper for LEWG polls. The LEWG status paper, P2247, will have a new revision for the upcoming plenary. I was planning on using a new number for the :EWG status report as I thought it would be less confusing than having two revision of the same paper number be completely different papers. If there is a preference to keep the paper number, I can do that going forward.

Herb Sutter : Yes, please. It makes advance notices easier if the papers with the heads up information always use the same number. JF and you can discuss off line if it makes sense to also have standing polling information paper numbers.

Ville Voutilainen : it's important that those papers list tentatively ready issues, but they have another purpose. They are supposed to keep track of general status of things to give even further advanced warning to interested parties

Bryce Adelstein Lelbach : we made a conscious effort to clearly assign priority levels and categories to different things. Whenever we take a poll on a paper sending it somewhere, we call out what priority level we are assigning it, what group it's intended for and which ship vehicle we have in mind. We also have a prioritized list of all the papers we send to LWG. How LWG uses that list is up to LWG. The process is explained on the GitHub.

Page explaining LEWG prioritization

Page with current LEWG Priorities

Peter Brett : in BSI, we are worried about small items getting stuck behind bigger items.

2.3 Pipeline stage 3 groups: Wording subgroup status reports

• **CWG**, Core wording: Mike Miller

Mike Miller presents.

We had two meetings since last plenary. One item left over from November plenary to categorize issues resolved by P1787. There will be a motion in the next plenary to categorize all those issues as defect reports against C++20 . We looked at a P1102 to address some inconvenience in the syntax of lambda expression. We will bring this for approval in the upcoming plenary. We continue doing issue processing, and currently have one issue resolution to move in the plenary. We are getting ready to deal with papers coming from EWG.

• **LWG**, Library wording: Jonathan Wakely

Jonathan Wakely presents.

LWG has continued to meet almost every Friday. We have 8 papers in the straw polls for the upcoming plenary, plus a new working draft of Networking TS. That will form the base for SG4 purposes. We do not plan on publishing a new revision of Networking TS.
We're not setup for making progress on huge papers in the current setup. We don't know how we will deal with bigger pieces of work, but we will have to figure it out. There are also

9 tentatively ready issues that will go into the straw polls. Some of those tentatively ready issues have been resolved by the papers in the straw polls. When we vote a paper with an issue resolution in, the corresponding issue will be closed.

Herb Sutter : we don't need to bring a working draft to plenary.
Jonathan Wakely : I will remove it. We approved 2 changes at the last plenary, and they have already been applied to the latex sources.

Bryce Adelstein Lelbach : there is a rare LEWG plenary motion which is related to SD8 – the standard library compatibility document. This paper has been ready for a while, but for technical reasons didn't make it to plenary before.

Herb Sutter : SD8 is owned by LEWG, which is why it is an LEWG motion. We want to approve it in the plenary. There is no change to the working draft, so it does not go through LWG.

Jonathan Wakely : The straw polls are not on the usual page, yet, but they will be up in the next couple of days.

Herb Sutter : we want the polls up a week before the plenary.

Mike Miller : that is the plan.

Tom Honermann : should we have a status report for the admin group ?

Herb : yes. I will add the admin group to the agenda. We will do so now.

2.3.1 Admin working group report (Hal Finkel)

Hal Finkel presents.

We have telecons on as needed basis. We had one last month where we focused on P2263, which is about a chat service. We identified different technical options and are in process of following up on experimenting with some of those options. We will come back to the wider group with the results from that discussion.

2.4 SC22 report

SC22 has not met since the last plenary. All F2F meetings are banned for the foreseeable future. This will be reviewed in the next plenary, which will be held in Summer.

This does not affects us as we do not plan to meet this year face to face.

3. New business

3.1 Review of priorities and target dates

- **Status page**
- **P1000**

Herb Sutter presents.

No discussion or decision to make change to priorities or schedule for C++23.

Features freeze for C++23 is our next potential f2f meeting a year from now. If you have any concerns about things that can't proceed virtually, please raise them on specific papers and as soon as possible. It means such papers can't make C++23.

3.2 Any other business

Peter Brett : is there an intention to propose set of priorities for C++26 ?

Herb Sutter : yes. I expect that to come up 2 years from now. It has been helpful for C++23.

Ville Voutilainen : I haven't worked on it yet, but I expect to do something about it.

Ville Voutilainen : we should consider having regular standing reports from LWG and CWG like we have from LEWG and EWG.

Jonathan Wakely : LWG report would be very simple.

Herb Sutter : we should pay attention to what is getting ready by looking at LEWG and EWG reports.

Hubert Tong : integration would improve if we had these reports. Core language sometimes changes in a way that surprises library.

Peter Brett : people will still bring up design issues as NB comments.

Mike Miller : sounds reasonable and I'm happy to do that for CWG.

Herb Sutter : I will add those reports to the status page.

Jonathan Wakely : when should we update these reports ?

Herb Sutter : when it makes sense.

4. Review

4.1 Review and approve resolutions and issues

No discussion

4.2 Review action items

Herb Sutter : remove the password from the meeting link

Herb Sutter : add code of conduct agenda item to the future admin agendas

Herb Sutter : modify DG chair in the agenda

Herb Sutter : add admin working group report to the agenda

Herb Sutter : link code of conduct slide in SD4

Mike Miller/ Jonathan Wakely : create stable number CWG and LWG report papers

Herb Sutter : add admin working group to the committee page

Herb Sutter : update status page with a link to the eventual 4 papers with reports

5. Closing process

5.1 Establish next agenda

Herb : I propose the same agenda modified as suggested. Any objections ?

No objections.

5.2 Future meetings (deferred to full meeting)
5.3 Future mailings (deferred to full meeting)

5.4 Adjourn

Meeting adjourned at 11:39 N. Am.