

WG21 2017-02-17 Telecon Minutes

ISO/IEC JTC1 SC22 WG21 N4645 — 2017-02-21

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Convener: Herb Sutter

Teleconference information:

Date: 2017-02-17
Time: 8:00am N.Am. Pacific Time
Duration: 2 hours

1. Opening and introductions

1.1 Roll call of participants

- Clark Nelson
- Andrew Pardoe
- Barry Hedquist
- Casey Carter
- Chandler Carruth
- Detlef Vollmann
- Gabriel Dos Reis
- Hans Boehm
- Herb Sutter
- Hubert Tong
- JC van Winkel
- Jeffrey Yasskin
- Jens Maurer
- John Spicer
- Jonathan Wakely
- Lawrence Crowl
- Marshall Clow
- Mike Miller
- Thomas Plum
- Ville Voutilainen
- Walter Brown

1.2 Adopt agenda

The agenda in [N4635](#) was adopted by unanimous consent.

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

[Current Status](#) shows assignments.

The only news is that there might be a new Concurrency TS.

2. Status, liaison and action item reports

2.1 Subgroup status reports (CWG, EWG, LWG, LEWG)

Core report

Three telecons since Issaquah, largely dealing with issues as issue processing had been on hold while doing C++17 work. There is a document with six Ready issue in the mailing, and another document with nine Tentatively Ready issues that have been discussed post-Issaquah.

Most NB comments were dealt with in Issaquah. Seven still pending resolution. Reached consensus on CH-2 so will bring that as a separate motion in Kona. There's a link to a Google Docs spreadsheet on the wiki which shows the status of each NB comment. There are still 44 issues not owned by any particular group that need to be taken ownership of and dealt with. For instance, reconsidering brackets versus braces for decomposition declarations. Requests EWG to take a look and let Core know of any that they should take, or otherwise give a response directly from EWG.

Expect to have a deluge of new issues to look at in Kona, in between dealing with NB comments and new C++20 work coming from EWG. Hope to have time to look at those new issues.

Maurer noted that some of the "unowned" issues were polled and decided against on Monday morning in Issaquah, so the spreadsheet might just need updating to say they are rejected.

Clow noted a number of issues on Default Comparisons, which have not been given a status yet, because they weren't formally rejected, but there also wasn't any discussion about them during Issaquah. They should be considered during Kona.

Miller volunteered to update the spreadsheet with any missing statuses.

Evolution report

Highest priority for Evolution in Kona is to address the remaining NB comments. Voutilainen will review the spreadsheet over the next two days. There are some C++17 issues to consider, including terminology of structured bindings. They will also look at class template argument deduction and deduction guides, which have some ongoing issues. Also need to look at `launder`. That should be all

for C++17-related work. Beyond that future material will be considered, including proposed changes to Concepts, in order to pave the way for eventual progress. Will look at Modules proposals later in the week, once the TS has been moved forward. There's a proposal for reflection deemed ready for EWG consideration. In total there are 27 papers to look at.

Library report

LWG will be working on C++17 all week. Still a large number of NB comments to deal with. Anything not for C++17 won't be looked at until after comments. A small group has been working on Filesystem comments, paper P0492 addresses most of them. There are still many other comments. Plan to split into groups to look at comments at the start of the week and then come together to decide on resolutions.

Ranges TS has changes to be reviewed.

Expecting to get a few NB comment resolutions from SG1 and LEWG, but maybe only half a dozen.

Brown asked whether there were any plans for joint sessions between EWG and LEWG, especially on new proposals. He suggested that Sutter's proposal on comparisons has significant library impact. Expressed concern that new features continue to be worked on without library, and then integration into the library tends to lag. Sutter said he had planned to present his paper to EWG and then if desired also present to LEWG, but would rely on the chairs to decide which groups are presented to when. Brown suggested joint sessions. Yasskin to think about which proposals warrant a joint session, but not all proposals do. Spicer said there are two parts, one being library people wanting to participate in the design, and the other being integration with the library; the first part should be handled by people attending the EWG sessions, or following the mailings and reports.

Library Evolution report

Yasskin will prioritize C++17 work, to the extent they have it. Only a small number of NB comments on their plate, plus a few high priority LWG issues requiring LEWG input. Will ask the direction group to prioritize work.

2.2 Liaison reports

2.2.1 Study Group reports

Reports from the following active SGs:

- **SG1, Concurrency:** Hans Boehm

Situation is as usual. There are a few NB comments that say they belong to SG1 which aren't on the SG1 agenda yet, so will be added. Most work will focus on C++17 priorities. There's also one paper on coroutines, P0534, which may or may not belong with SG1. Voutilainen agreed that Evolution is the most sensible place for that paper to go, as the default place for any cross-cutting concerns to go. Boehm asked if SG1 should discuss it first, or if there should be a joint session. No clear decision yet, may not be helpful or a good use of SG1's time. Boehm to review the paper and make a suggestion.

- **SG5, Transactional Memory:** Michael Wong

No report.

- **SG6, Numerics:** Lawrence Crawl

SG6 have quite a number of papers to go through. Would like to get an initial draft out, likely to only contain low-level machine primitives not high-level types. That is contingent on getting enough people away from issue processing to join SG6. Thinking they should meet later in the week. Planning for at least a full day, not likely to get through the material in less than a day. Could use more than that, but seems unlikely they would get enough time from people.

Clarified for Sutter that an initial draft would not be a formal working paper, just a document for the group to work with.

- **SG7, Reflection:** Chandler Carruth

Three main objectives for the meeting. There is a paper that was approved by SG7 in Issaquah to go to the Evolution groups. It's been refined and worked on so it can go to the working groups. Chairs have been approached about joint suggestions, but Carruth recommended not having a joint session. Also two other proposals with different approaches. Hoping to have an evening session early in the week to discuss these papers. The papers are not surprises, knew they might be coming, and there's no reason to halt progress on the main proposal. These alternatives might offer improvements for subsequent design directions, but would not invalidate the main proposal.

- **SG10, Feature Test:** Clark Nelson

Might be useful to meet to discuss some recent topics. Might only need half an hour to meet informally.

- **SG12, Undefined and Unspecified Behavior:** Gabriel Dos Reis

There are a couple of papers in the mailing. There was a paper from Issaquah that didn't get looked at. Planning to meet for a full day to deal with them. All papers deal with pointers, comparisons, buffers/arrays and object lifetime, and function interfaces. Also a long-standing paper on memcpy and object lifetime, and on removing undefined behavior from the preprocessor.

Tong said there's another upcoming issue that might need resolving soon, regarding the kind of pointer that is returned by malloc. Miller has not allocated an issue number yet, but will do so before Kona.

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

Yasskin said that SG14 had asked for some time to present to LEWG during the week.

Note that the following are currently complete and handled in the core subgroups: SG2, Modules; SG3, File System; SG4, Networking; SG8, Concepts; SG9, Ranges; SG11, Databases; SG13, HMI

2.2.2 SC22 report

Earlier today received the results of the two PDTS ballots for Ranges and Networking. Hedquist will put together the formal records of response. Around 50-60 issues across the two ballots. C++17 work will still take priority, and as many issues need Library input they may not get looked at during Kona.

Tong said there had been a change to the JTC1 directions, one of the PDTS papers does not meet the structure now required by them. Sutter to discuss with SC22, unlikely we'll restructure C++17 now, but will try to follow for future TS.

Several TS are structured as sub-sections of the main standard, with non-consecutive sections in the TS. This is forbidden by ISO. Sutter will work with SC22 and the editors to ensure compliance. It will be possible to solve this without having to stop using our preferred structure.

2.2.3 SC22/WG14 (C) report

Crowl asked about the status of the short float proposal in WG14. Nelson said apart from agreeing that short float would be the preferred name there has been no work to actually add it to the draft. Crowl asked whether they would be likely to follow WG21's direction, so that if we move forward they would not take a different direction and we'd have the unfortunate situation of two different specifications. Nelson said he thought that they would be likely to follow WG21.

3. New business

3.1 Review of priorities and target dates

Current Status -- work on Technical Specifications is progressing.

Plan to send current draft out for DIS ballot. If that has no No votes we can skip the FDIS ballot. Hope to have a Friday/Saturday motion in Kona to send the working draft to ballot.

There's a chance Parallelism TS v2 might be ready for PDTS ballot out of Kona. Boehm said it might need some coordination with LWG and SG14. Clow expressed doubt that LWG would have any time for TS material during the week. Might be some time on Saturday, but too late for polling in Kona.

Coroutines expected to go to PDTS ballot out of Kona. Not aware of any updates to the working paper since Issaquah. Maurer noted an entry at the end of the Core wiki for Issaquah that late changes to Coroutines needed Core review, and some LWG review. No sign of any update regarding any such Core review. Need to check the status of that. Voutilainen recalled opposition to sending it straight to PDTS ballot because Core hadn't reviewed it with a PDTS target in mind, and wanted a chance to do a more thorough review. Sutter suggested that Miller should ask people to prepare any comments in advance and bring them to the group if they have issues. Maurer pointed out open issues regarding lookup for operator `coawait` that haven't been addressed by Core yet.

Sutter asked if Evolution were looking at any changes to Modules before it could go to PDTS. Voutilainen said that any design discussion were for later evolution, after a TS (either for a second TS or the standard) and there is nothing that is under discussion for change before a PDTS. Dos Reis

is aware of some concerns but they only require clarifications not design changes. He has a late paper with new wording to address those concerns. A problematic paragraph about namespace partitions has been removed. Spicer agreed with the characterization, modulo what the missing specification actually says. Voutilainen agreed that the changes do not constitute design changes and would not need another review by Evolution. Possibility of a PDTS will depend on how Core discussion goes.

Sutter reminded us that for a TS we go from PDTS straight to publication, after addressing the PDTS ballot comments. No need for another ballot, unless we insist on it because there is some urgent problem.

3.2 Review of current mailings

Voutilainen is tracking some papers from previous mailings which haven't been discussed during any meeting, but no plan to spend time on them as nobody is shouting about them.

3.3 Any other business

Tong noted that WG23, Programming Language Vulnerabilities, plans to produce an annex covering C++. A few people plan to meet with them to try to shape that with them. Sutter had sent an announcement to the reflectors and made a call for volunteers. Vollmann said Patrice Roy was participating.

Wakely mentioned DMARC settings for email and Sutter said he believes those issues are fixed. There may also be some de-duplication going on if emails from multiple lists are sent to the same person.

Maurer added draft room allocations to the wiki.

4. Review

4.1 Review and approve resolutions and issues

None.

4.2 Review action items

Miller was to update ballot comment status spreadsheet, and had completed that task before this agenda item was reached.

Voutilainen to update the status of Evolution comments, and any unowned ones.

5. Closing process

5.1 Establish next agenda

To be based on current meeting agenda.

5.2 Future meetings (deferred to face-to-face meeting)

5.3 Future mailings (deferred to face-to-face meeting)

5.4 Adjourn

Approved by unanimous consent.