# WG21 2017-06-30 Telecon Minutes

ISO/IEC JTC1 SC22 WG21 N4676 — 2017-06-30

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Convener: Herb Sutter

Teleconference information:

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Date:     2017-06-30
Time:     8:00am N.Am. Pacific Time
Duration: 2 hours
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# 1. Opening and introductions

## 1.1 Roll call of participants

- Clark Nelson
- Barry Hedquist
- Casey Carter
- Dawn Perchik
- Gabriel Dos Reis
- Hans Boehm
- Herb Sutter
- Hubert Tong
- J Daniel Garcia
- JC van Winkel
- Jeffrey Yasskin
- Jens Maurer
- John Spicer
- Jonathan Wakely
- K.R. Walker
- Marshall Clow
- Michael Wong
- Mike Miller
- Loïc Joly
- Olivier Giroux
- Robert Douglas
- Thomas Plum
- Vassil Vassilev
- Ville Voutilainen
- Walter Brown

## 1.2 Adopt agenda

The agenda in [N4665](#) 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.

Will arrange an editor for Concurrency v2 TS, and state editor for C++20.

# 2. Status, liaison and action item reports

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

**Core report**

Two major agenda items are Concepts TS and Modules TS. Been involved with both for some time.

Had a teleconference earlier in the month to deal with outstanding issues with the Concepts TS. The notes from the telecon are on the Toronto wiki. Dealt effectively with the issues. A few related to design and capabilities will be dealt with on Tuesday in EWG. Have direction for most issues. Got a version of the TS that has been rebased against the C++20 working paper. One change made in C++17 needs to be reflected into the draft TS. Will be reviewing the updated draft, and drafting wording for the issues discussed in the telecon. Whether on Friday they will be in a position to apply to the WP or whether it will be delayed to Albuquerque will depend on how much progress is made during the week. Plan to have a document that will contain the updated content, instead of using the original TS.

With regard to the Modules TS, there was a lot of fruitful discussion in Kona. Understand that EWG had votes on directions for changes at the end of the meeting, so Core will want to review those.

Additional, several papers proposed that have core wording. They are listed on the Core wiki. About half a dozen have Core-ready wording for review. Hope to also have time to deal with some issues.

Maurer asked if there are any papers he missed regarding Concepts or Modules, which would be ready for Core to look at. Voutilainen said the papers would need some Evolution discussion first. Dos Reis said there were two Modules issues EWG were concerned about, which were addressed by a paper in the post-Kona meeting from Nathan Sidwell, which should be looked at by Core. In the pre-Toronto mailing there is also a paper from Dos Reis. Maurer to add them to the wiki.

Carter said he has a paper for changes to the Ranges TS, which needs some approval from Core, P0662R0.

Tong noted P0552 is listed as ready for review, but was already moved into the WP.

**Evolution report**

Highest priority matter is Modules, as sending it to PDTS is a goal for the meeting. Have some proposals for addressing the issues raised in Kona, which will be looked at and hopefully forwarded to Core. Modules discussion is scheduled for Tuesday morning, in order to give Core as much time as possible.

For Concepts, have roughly seven major items to discuss design-wise.

Have about forty papers for other topics, some new some revisions.

Brown asked if there are papers left over from previous meetings to be dealt with in Toronto. Voutilainen has picked up a couple of older papers relevant to some controversial parts, requested that anything he's missed be brought to his attention.

**Library report**

NB comments for Ranges, Networking and Coroutines to look at. Some papers left over from previous meetings which have been reviewed but were for post-C++17 so they will be looked at, and decide which to bring forward on Saturday. Also have issues to process. Expect new work to come from LEWG too. Hoping for a less frenetic meeting than the last few, which have involved LWG meeting all day and night for the whole week.

Brown asked why previously-reviewed papers would be discussed again. Clow said it would be for anybody to offer new information. Clow is using the wiki for a list of papers on the LWG agenda.

Sutter thanked LWG for the hard work in Kona.

**Library Evolution report**

Six remaining papers from Kona, many more new ones. Do not expect to get through all of them. Will also try to deal with library issues with LEWG status.

Also looking for a suitable replacement chair, as current term ends in a year.

## 2.2 Liaison reports

Wong reported that WG23 has been in touch regarding safety critical. Hoping to invite the WG23 chair to Toronto, but waiting for a response. Trying to facilitate but not push things.

### 2.2.1 Study Group reports

Reports from the following active SGs:

- **SG1, Concurrency**: Hans Boehm

List of papers intended to be discussed on the wiki. Expect to spend Monday looking at the proposal to move the Concurrency TS to C++20. Some pieces are uncontroversial, the futures changes are not.

Also have some papers to discuss for Concurrency v2. Need to look at the C++ memory model, due to a significant bug being discovered recently. Requested somebody to clarify the status of Parallelism v2 proposals previously looked at.

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

SG5 will not meet during the week. Continue to hold weekly calls.

- **SG6, Numerics**: Lawrence Crowl

No report. Will need a stand-in chair to meet during Toronto.

- **SG7, Reflection**: Chandler Carruth

No report. Several papers, planning an evening session.

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

Will be meeting with EWG during the week, after Tuesday.

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

Hope to meet on Thursday if there's time. Wong said that if the WG23 rep attends he will be steered towards SG12.

There's an issue with constexpr `std::less<T*>`, agreed a direction in Kona. Issues with lifetimes and `std::launder`, also going through Evolution.

Tong recalled a suggestion of a joint session between Core and Library, looking at `std::launder` topics.

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

Not planning to meet, but hold monthly meetings. Two SG14 people coming to their first meeting to champion papers incubated through SG14.

**2.2.2 SC22 report**

Additional ISO adminsitrivia continues to escalate. WG21 the only WG in SC22 using the required ISO meeting planner, others grumbling about it.

**2.2.3 SC22/WG14 (C) report**

# 3. New business

### 3.1 Review of priorities and target dates

[Current Status](#) -- work on Technical Specifications is progressing.

During recent meetings it has become clear that National Bodies have had their positions known and want to see progress on TS's, and Sutter will be considering their positions when determining consensus. Has been polling them in advance of the meeting, and has received no objections except to parts of the Concurrency TS. If there are proposals that already have consensus they should be given priority and moved on Saturday. Tong questioned why NBs should have influence over what happens during the meeting, because if the committee doesn't produce a new WP then there isn't anything for NBs to even have an opinion on. Sutter explained his process for increasing consensus. NBs are asking for something to be sent out for them to vote on. Miller noted that this discussion is on a political level, not technical one, but that there has been a repeated request over the last few years to please trust the working groups to have done the technical work and not cause delays in plenary. That trust should also go the other way, so that if Working Groups feel there is still work to be done, that they should be given time to do that. Core will do their best and present a consensus, but won't rush just because NBs want progress.

Sutter to take over preparation of Agenda from the following meeting.

### 3.2 Review of current mailings

### 3.3 Any other business

Wong drew attention to the celebration dinner, and the July 5th deadline for registering to attend.

Brown expressed a concern about travel between hotels and the meeting venue. Wong suggested getting tokens for streetcars.

## 4. Review

### 4.1 Review and approve resolutions and issues

None.

### 4.2 Review action items

## 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)

Next year meetings will be March 12th in Jacksonville, June in Rapperswil. Full details to be in the Toronto agenda.

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

## 5.4 Adjourn

Approved by unanimous consent.