

# WG21 2026-03 Croydon admin telecon minutes

ISO/IEC JTC1 SC22 WG21 N5038 — 2026-03-09  
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SC22/WG21 pre-meeting telecon  
Convenor: Guy Davidson  
Date: Monday 2026-03-09  
Time: 16:00 UTC

## 1. Opening and introductions

Guy Davidson opens the meeting at 16:02 UTC

### 1.1. Roll call of participants

- Guy Davidson
- Walter E Brown
- Billy Baker
- Florian Sattler
- Braden Ganetsky
- Hana Dusíková
- Detlef Vollmann
- Wyatt Childers
- Inbal Levi
- Nevin Liber
- Jonathan Müller
- Roger Orr
- Jeff Garland
- Jens Maurer
- Hubert Tong
- Nina Dinka Ranns
- Bryan St. Amour
- Tom Honermann
- Ruslan Arutyunyan
- Steve Downey
- Ville Voutilainen
- Li Yihe
- Andreas Weis
- Michael Wong
- Ben Boeckel

- Herb Sutter
- Jonathan Wakely
- Matthias Kretz
- Jeff Snyder
- Jonathan Wakely

## 1.2. Adopt agenda

No objections.

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 liaison assignments

[Status page](#)

Status page is up to date.

## 2. Status reports

### 2.0. Advisory subgroup status reports

- **Meeting logistics:** Jens Maurer

There will be about 6 meeting rooms in Croydon, 4 of which will be occupied all week long by the usual suspects. There is a “meeting rooms” wiki page. An email has been sent to ask that every subgroup chair requests meeting room space and time there. So far only 4 study groups have requested space and time. The rooms will be distributed based on those who registered. Anyone who is late will not have their time and space wishes considered properly. Some rooms will be occupied Sunday evening, so some setup will need to happen on Monday morning. There will be the usual 6pm welcome session on Sunday evening.

There are just 41 registrations on the WG21 room block. Some people are registered through their companies instead. Only 41 seems on the very low end. Everyone should be registered on the ISO portal, for an accurate count of chairs in the room.

- **AG**, Admin group: Nevin Liber

Admin is not meeting in Croydon.

There have been three mailings since Kona, all on time.

The post-Croydon mailing is scheduled for April 20th, and the pre-Brno mailing is tentatively scheduled for May 11th.

The attendance sheet is ready, and not uploaded yet. It will be uploaded before Croydon.

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

Two new members since the last meeting, Paul Kenney and Jeff Garland. There is an updated P2000, and a new paper P5000 has been split off for the short-to-medium term instead of long-term.

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

The ABI Review Group has received no new inquiries, and thus has had no activities.

### 2.1. Pipeline stage 1 groups: Specialist subgroup status reports (SGs)

SGs 2, 3, 5, 8, 11, 12, 13, and 21 are currently dormant and handled in the main subgroups. The active SGs are:

- **SG1**, Concurrency: Olivier Giroux, Hans Boehm, Ruslan Arutyunyan

SG1 did not meet since Kona, but we have an upcoming telecon on Thursday, March 12th. This will give us the best shot at replying to NB comments properly.

SG1 has very little work at this meeting. Maybe a day's worth.

After this meeting, Ruslan will be chair and Gonzalo vice-chair.

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

Not planning to meet in Croydon.

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

SG6 Numerics has not met since Kona and has accumulated 9 papers to review. This includes P3045 "Quantities and units library", for which SG6 will join SG18 again. Rooms have been requested for three half-days, but it remains to be seen whether we can find quorum for that much time: SG18 + SG6 amounts to half of the meeting.

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

SG7 didn't meet. There is one SG7 paper for Croydon, but as it's 29 material and there would likely not be a quorum, so the paper will be seen in EWG instead.

- **SG9**, Ranges : Jonathan Müller, Zach Laine

SG9 has not met since Kona and will not meet in Croydon; the backlog is unusually small and only for C++29. Furthermore we expect quorum problems when talking about C++29 while C++26 is being finalized. There might be a telecon before Brno instead.

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

SD-FeatureTest has been updated.

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

SG14 does not plan to meet in Croydon. There will be a call on March 11th to discuss P4007. The authors of executors and tasks have been invited to come together with the authors of P4007 to see if they can resolve their concerns. This is to pre-empt the possible long discussions in LEWG, to shorten the NB comments that will come up. The goal is to help out LEWG.

Also related, SG5 has published their first whitepaper on transactional memory.

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

SG15 has had no meetings since the last meeting. The chairing team needs to sync to determine if SG15 should meet. The chairs are not aware of any papers needing discussion.

- **SG16**, Unicode: Tom Honermann, Steve Downey

SG16 has met 7 times since the last pre-meeting telecon and will meet one more time before Croydon. SG16 does not expect to convene in Croydon. The regular attendees for the Text group are very active in other groups making quorum challenging during face-to-face meetings.

SG16 is beginning to work on C++29 track items as well as having reviewed any issues for C++26 within our domain.

SG16 has no NB comment papers or papers for C++26 in its queue.

The chair for SG16 will formally transition from Tom Honermann to Steve Downey after Croydon and C++26 is approved to be sent to ISO.

Recommendations were offered for the following C++26 NB comments:

- [US 5-018](#): 5 [lex] Define "whitespace character"
- [US 189-304](#): 31.12.6.1, 31.12.6.5.6, 31.12.6.5.7, D.22.2 rename filesystem::path methods

The following papers were reviewed and forwarded:

- [P3695R2: Deprecate implicit conversions between Unicode character types.](#)
- [P3688R4: ASCII character utilities.](#)

The following papers have been discussed and currently await further review:

- [P3876R0: Extending <charconv> support to more character types.](#)
- [P3412R3: String interpolation.](#)
- [D3951R1: String Interpolation with Template Strings.](#)

Our current focus is on the last two papers (P3412 and P3951). These are competing proposals for which we are working to find consensus for a common design and, in particular, how interpolated strings should behave with respect to encoding prefixes, digraphs, universal character names, raw string literals, and support for UDLs.

- **SG17**, EWG incubator: Erich Keane, James Touton

Erich: SG17, the EWG Incubator has not met once again, and does not intend to meet for the Croydon meeting. I'd like to have a discussion with the Convenors/SG18 chairs to see about merging the two groups, and having the current SG18 chairs run it as a 2-SG-in-1 thing, as I'll not be able to run this for the foreseeable future due to my EWG obligations. I'd

hope we can discuss this in Croydon so that any changes can be announced by end-plenary.

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

SG18 LEWGI has not met since Kona.

We have requested two half days for Croydon. Completing the review of P3045 Quantities and units library will be the top priority.

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

SG19 does not plan to meet. An SG19 direction has been issued to showcase where we're heading with all these features, on top of the DG paper about ethical use of AI in the committee.

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

SG20 has met a few times, working on the backlog list of teaching topics. We gave input to a few papers. Everyone

SG20 will meet for half a day in Croydon.

SG20 will:

- continue work on expanding the education topic list
- providing paper feedback (feel free to send more papers our way)
- scope out new topics from Features added to C++26

- **SG22**, C/C++ liaison: Nina Ranns, JeanHeyd Meneide, Davis Herring

SG22 has not met since Kona. This isn't due to an empty work queue, but due to no chair availability. We're actively looking for a study group chair replacement.

SG22 will not meet in Croydon.

WG14 report:

"We've started balloting for a new work item for draft technical specification for \_Optional. The SC 22 CIB has now started.

We're holding the second half of the Spring meeting next week, summer meeting will be in Ottawa in August, and we're collocated with WG21 in Brazil for the fall meeting.

We have a tentative schedule in place now for C2Y and a large backlog of papers.

<https://www.open-std.org/jtc1/sc22/wg14/www/docs/n3827.pdf>"

- **SG23**, Safety and Security: Roger Orr, Matthew Butler

SG23 has not met since Kona.

There are six open papers that are targeting SG23. We have hoping to meet for up to a day in Croydon.

## 2.2. Pipeline stage 2 groups: Design subgroup status reports

- **EWG**, Core evolution: Erich Keane, Hana Dusíková, Jeff Snyder

Evolution has hosted a number of telecons over the past few months on the topic of RO 2-56, a Contracts NB comment. We have failed to reach consensus on any proposed change. We intend to do the following in Croydon, in order:

1. See any papers pertaining to our list of Open NB comments (we currently have 9), and finalize EWG's response to all of these remaining issues (either by sending a paper to CWG, or closing as NCFC)
2. Discuss a list of recent CWG issues that have been assigned to EWG, and have reasonable justification for discussing before C++26 is finalized.
3. Start discussing papers targeting C++29 as we can, leaving an interrupt handler active for anything that comes back from CWG.

EWG will be taking a Hiatus from discussing Contracts related papers for this meeting, other than the ones targeting the above NB comment, RO 2-56, for the C++26 timeframe. This is to prevent EWG from being distracted by the topic more than necessary (and risking C++26), as well as give EWG an opportunity to discuss non-Contracts related C++29 papers for a few days. We will return to discussing Contracts (papers permitting) in Brno.

Otherwise, EWG will be meeting in Croydon for the full-5 days, paper-load permitting.

EWG has approximately 107 papers or issues to see in Croydon. We will prioritize CWG issues with papers, NB comment reacting papers, other 26 stuff (if any), and then we will start seeing 29 stuff. If there will be any boomerang from CWG we will see it ASAP. The schedule is currently being worked on, and should be finished this week. We asked EWG paper authors to fill a google form to help us with the schedule, and got answers only for 22 papers (out of 89). Answers in the form will be taken into account (length of discussion, preferred day, availability) for those who answered it.

We also have a few non-actionable papers which are asking us fundamental questions about the future of C++ (like what's memory safety), these will be seen towards the end of the meeting.

- **LEWG**, Library evolution: Inbal Levi, Fabio Fracassi, Andreas Weis

LEWG will have met 10 times between Kona and Croydon.

We've processed 38 NB comments and 10 C++26 papers (accommodating the comments), as well as gave initial feedback on ~4 C++29 papers.

We have 29 NB comments left for Croydon: <https://github.com/orgs/cplusplus/projects/50>

We will look at NB comments during the first 3 days of Croydon (including a few papers related to the NB comments), and the last two days are dedicated to C++29 (of course, pending finishing C++26 topics).

## 2.3. Pipeline stage 3 groups: Wording subgroup status reports

- **CWG**, Core wording: Jens Maurer, Jason Merrill, Shafik Yagmour

The Core Working Group has met by telecon every two weeks, processing core issues with a focus on reflection-related issues.

For Croydon, we still have 9 open NB comments plus an unknown portion of the 9 NB comments open in EWG. We will address these as a priority and then continue to process core issues to get C++26 in as good a shape as possible.

We will probably not pivot to C++29 stuff in Croydon. Our goal is to make C++26 from a core language perspective as good of a standard as it can be.

- **LWG**, Library Working: Jonathan Wakely, Jeff Garland, Dietmar Kühl, Bryan St. Amour, Christian Trott

LWG has been holding weekly telecons to review papers and issues which address NB comments, to continue making progress on C++26. We have processed a large number of issues, mostly related to NB comments. They will be coming as papers.

We will meet all week in Croydon, to do more of the same. We will have a challenge in Croydon, seeing as we have 25 to 30 NB comments to process, some of which are still on LEWG's plate. We may be able to get to C++29 things if everything goes well.

## 2.4. SC22 report

SC22 has not met since Kona. There is nothing to report so far.

## 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](#)

### 3.2 Any other business

Nothing to discuss.

## 4. Review

### 4.1 Review and approve resolutions and issues

### 4.2 Review action items

## 5. Closing process

### 5.1 Establish next agenda

The next agenda will look a lot like this agenda.

### 5.2 Future meetings (deferred to full meeting)

### 5.3 Future mailings (deferred to full meeting)

### 5.4 Adjourn

Meeting adjourned at 16:29 UTC