

## **WG21 2023-06 Admin telecon minutes**

ISO/IEC JTC1 SC22 WG21 N4955 — 2023-06-05

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Convener: Herb Sutter

SC22/WG21 pre-meeting telecon

Monday 2023-06-02

08:00 N.Am. Pacific Time

### **1 Opening and introductions**

Herb Sutter opens the meeting at 08:18 N.Am. Pacific Time

Herb Sutter : The Varna agenda has the correct zoom details for the plenary.

John Spicer : There will be updates to the Varna agenda regarding the times.

#### **1.1 Roll call of participants**

Herb Sutter

Gabriel Dos Reis

Erich Keane

John Spicer

Tom Honermann

René Ferdinand Rivera Morell

Walter E Brown

Billy Baker

Ben Craig

Nathan Owen

Hans Boehm

Vassil Vassilev

J. Daniel Garcia

Detlef Vollmann

Inbal Levi

Nina Ranns

Jens Maurer

Roger Orr

Michael Hava

Vassil Vassilev

Matthias Kretz

JC van Winkel

Jens Maurer

Hubert Tong

Michael Wong

Mitsuhiro Kubota

#### **1.2 Adopt agenda**

Nina Ranns : SG23 is missing from the original agenda.

Roger Orr : Direction Group chair is now Bjarne.

Gabriel Dos Reis : SG12 chair may not be correctly reflected.

Herb Sutter : There have been changes to the chairing roles recently. I'll look into that. The blanks are representing chair roles that need to be filled.

No objection to approval of agenda as amended. 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](#)

John Spicer : SG12 has Ballman/Wakely listed as chairs on the agenda. I will need to know what to put there.

Herb Sutter : Aaron stepped down. I have Michael Wong listed there. If you are interested in chairing, please send me an e-mail.

## **2. Status reports**

### **2.0 Advisory subgroup status reports**

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

There have been three mailings since Issaquah, and the next one is scheduled for July 15th.

- **DG**, Direction group: Bjarne Stroustrup

Michael Wong : We released an R4 of P2000 . There is also a safety paper coming from Bjarne.

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

ARG (ABI Review Group) did not receive any inquiries (and thus did not discuss any matters).

### **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 does not meet outside F2F meetings anymore, nothing to report.

John Spicer : We should encourage reporting plans for the upcoming meeting.

Detlef Vollmann : A lot of people said they will be in Varna and we have a number of papers to address. We will definitely be meeting in Varna.

- **SG2**, Modules: David Stone

No report.

John Spicer : we should probably make modules SG dormant. If anyone wants to reactivate it, we can deal with it.

Tom Honermann : there was a paper in the latest mailing with a request for feedback from SG2.

Gabriel Dos Reis : I recommend making it dormant. Most of the issues can be dealt with in EWG or CWG. If we do get anything, we can reactivate the study group. Even the paper that is in the mailing doesn't need a specialized group and can be handled in EWG.

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

No report.

Herb Sutter : Is Senders/Receivers still in Networking or entirely in the main groups now?

Inbal Levi : it's in LWG now and they are planning on working on it in Varna intensively.

Detlef Vollmann : Dietmar's work will fit into the sender/receiver framework, He doesn't have an update for Varna, but is still working on it. It makes sense to discuss it in SG4 before it goes to EWG.

Inbal Levi : there are some updates for Senders/Receivers that will reach SG9 and library evolution in Varna

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

SG5 has been inactive. TM TSv2 should be published soon.

Herb Sutter: I will move SG5 to the dormant list.

Jens Maurer : Going back to SG2 topic, I have reassigned the two papers aimed for SG2 to EWG.

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

SG6 does/did not meet between meetings. SG6 has 2 papers and one morning session scheduled for the Varna meeting.

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

SG7 didn't meet and will meet in Varna.

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

SG9 has met two times since "Issaquah", and reviewed the following papers:

- [P2799R0](#): Closed ranges may be a problem; breaking counted\_iterator is not the solution
- [P2214R2](#): A Plan for C++23 Ranges
- [P2846R0](#): size\_hint: Eagerly reserving memory for not-quite-sized lazy ranges
- [P2728R3](#): Unicode in the Library, Part 1: UTF Transcoding

We will meet in Varna on Monday morning session (June 12th) (meetings will take place in the "Nota" room).

We will discuss the following papers (and possibly other SG9 papers which may come up during the next two weeks):

- [P2846R0](#): size\_hint: Eagerly reserving memory for not-quite-sized lazy ranges
- [P2728R3](#): Unicode in the Library, Part 1: UTF Transcoding

Both regular participants and newcomers are welcome!

John Spicer : question for SG7 if there are any specific plans on what will happen in Varna.

Herb Sutter : The email doesn't contain that information and I don't know anything more specific.

Jens, do you have any papers assigned to SG7 ?

Jens Maurer : There is a large number of papers assigned to SG7.

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

No report.

- **SG12**, Undefined and unspecified behavior, and vulnerabilities: \_\_\_\_\_, Michael Wong

We didn't have a virtual meeting recently.

We don't have plans to meet in Varna.

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

SG14 report is in [P2887R0](#) SG14: Low Latency/Games/Embedded/Finance/Simulation virtual meeting minutes to 2023/05/11

We continue our monthly rotation of Games, Embedded, and Finance. Lately, we have been working through a Games paper proposed by Patrice in collaboration with the Games community, that has not yet been published. The next call will be July 12th

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

Tom Honermann : We had a meeting recently. Focus on how to deal with modules and build systems. Rene has been making progress on the ecosystem IS, but I don't have details on that.

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

Summaries of SG16 meetings held since the last pre-meeting admin telecon, with the exception of the [2023-05-24 telecon](#), are available in [P2891 \(SG16: Unicode meeting summaries 2023-01-11 through 2023-05-10\)](#).

SG16 held its 100th telecon on 2023-02-01.

The following paper was reviewed and forwarded for inclusion in C++23 as the resolution of NB comments [FR-010-133](#) and [FR-021-013](#).

[P2736R0: Referencing the Unicode Standard](#)

The following paper was reviewed for inclusion in C++23 as the resolution of NB comment [FR-020-014](#), but no consensus was found to forward it for that target. This paper remains in consideration for C++26.

[P2749R0: Down with "character"](#)

With C++23 finalized, focus turned to features targeting C++26 and beyond. LEWG hosted an evening session in Issaquah to begin socializing the following papers (for which SG16 has not yet completed its review).

[P2728: Unicode in the Library, Part 1: UTF Transcoding](#)

[P2729: Unicode in the Library, Part 2: Normalization](#)

Following Issaquah, SG16 has kept busy reviewing the following papers that target C++26 or later.

[P2773R0: Considerations for Unicode algorithms](#)

[P2728R3: Unicode in the Library, Part 1: UTF Transcoding](#)

[P2779R0: Make basic\\_string\\_view's range construction conditionally explicit](#)

[P2741R1: user-generated static\\_assert messages](#)

[P2863R0: Review Annex D for C++26](#)

[P2871R0: Remove Deprecated Unicode Conversion Facets From C++26](#)

[P2873R0: Remove Deprecated Locale Category Facets For Unicode from C++26](#)

[P2872R0: Remove wstring\\_convert From C++26](#)

SG16 also reviewed the following proposal to the Unicode Consortium that seeks to establish a protocol for the display of characters that do not fit in the fixed-width display format traditionally used for command line terminals and consoles. If such a protocol were to be developed and approved by the Unicode Consortium, it would provide a language independent mechanism that would subsume the enhanced display capabilities that have been adopted for `std::format` and `std::print` via [P1868](#), [P2675](#), and [P2093](#).

[L2/23-107: Proper Complex Script Support in Text Terminals](#)

SG16 will not meet in Varna since neither of its chairs will be attending in person and because it is difficult to attain quorum at in-person meetings due to contention with the WGs and other SGs. SG16 will continue to meet at its regular twice monthly cadence.

- **SG17**, EWG incubator: \_\_\_\_\_, Erich Keane

SG17 has not met since Issaquah (<https://wiki.edg.com/bin/view/Wg21issaquah2023/SG17>), however we do intend to meet for around 2 days in Varna, where we will see overflow papers from EWG. The schedule is not yet available, but will be as soon as JF and I figure out what papers we'll be seeing in EWG.

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

SG18 LEWGI has not had meetings separate from LEWG. The chairs of SG18 will rotate with the LEWG chairs during the Varna meeting.

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

SG19 report is in [P2888R0](#) SG19: Machine Learning Virtual Meeting Minutes to 2023/05/12

We continue our monthly rotation of Graph, stats, and Matrix. We have been aiming to push out Graph and More Stats. Our first Stats paper is progressing. The next call will be July 13th.

Herb Sutter : Do you plan to meet in Varna?

Michael Wong : I'm waiting to see if there is content to make a meeting in Varna.

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

We have been slowly but steadily writing C++ curriculum guidelines for several "topics". Our result so far can be found at <https://cplusplus.github.io/SG>

SG20 will meet in-person in Varna on Wednesday. We will look at what we have achieved so far

and look ahead at how we can streamline our process more in the future. We will also do some in-person "topic" writing.

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

We have been working toward the plan described in P2695R1.

We have had 5 telecons since Issaquah.

We have been working and making progress on violation handlers and the semantics of things like throw-expressions.

The plan for Varna is to complete the work on violation handlers and hopefully other related issues so that we can move on to syntax.

- **SG22**, C/C++ liaison: \_\_\_\_\_, Thomas Koeppel, JeanHeyd Meneide, Richard Smith

Jens Maurer : We need a new chair for this group. We have a number of Core issues and papers that would benefit from being put into the process we established with the C committee.

Herb Sutter : please let me know if you want to step up as the chair of SG22.

Tom Honermann : there's a discussion in contracts that will be relevant for SG22.

- **SG23**, Safety and Security: Roger Orr, Ben Craig

We have held two SG23 telecons since Issaquah.

At the first we voted to encourage more work on P2771R0: "Towards memory safety in C++" and requested the author to separate the compile and runtime portions more clearly.

At the second we forwarded P2821R1: "span.at()" to LEWG. We also supported spending more committee time pursuing alternative directions for checked access to span.

We are planning to have a meeting in Varna.

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

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

Erich Keane : EWG intends to meet all 5 days in Varna. We have had 2 telecons since Issaquah. We won't be doing the one scheduled next week. We worked on P2806 "do statement-expressions" and we also had an issue processing telecon.

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

Ben Craig : We caught up on our backlog and recently closed a large number of github items that haven't had any work in the last year. We will be meeting every day in Varna.

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

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

CWG has held teleconferences approximately every three weeks since Issaquah and has primarily reviewed issues. Further, P2738R1 (constexpr cast from void\*: towards constexpr type-erasure) was approved for C++26.

The following papers are going to be reviewed in Varna:

P2308 Template parameter initialization

P1061R5 Structured Bindings can introduce a Pack

P2828R1 Copy elision for direct-initialization with a conversion function (Core issue 2327)

and other papers as EWG forwards them or as updates become available.

A frequently updated list of straw polls anticipated for Varna is here:

<https://wiki.edg.com/bin/view/>

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

(Report received after the meeting; included here for completeness.)

LWG have continued to hold Zoom telecons, although we've had a few breaks in the schedule due to chairs traveling and other commitments. We already have several papers that have been approved in telecons, which will be in the polls for Varna, along with whatever else we approve during the meeting. We will be meeting all week in Varna to review proposals, with several sessions planned to look at P2300 (std::execution). I intend to get the polls published on the wiki early, so please review the straw polls page through the week, so that you know what's coming for the plenary. The draft polls will be visible at <https://wiki.edg.com/bin/view/Wg21varna/LWGStrawPollsStaging> before they go on the real StrawPolls page.

The list of papers already approved at telecons can be found at

<https://github.com/cplusplus/papers/issues?q=is%3Aopen+is%3Aissue+label%3Atemporarily-ready-for-plenary+label%3ALWG>

## 2.4 SC22 report

Herb Sutter : There were annual updates to the ISO directives which I sent around a few weeks ago. They mostly don't affect us. The largest issue is an administrative issue regarding TS's. ISO has a problem with a TS that modifies an existing standard. This has been a standard procedure for SC22 and we have been doing it for a long time. We are still pushing back on the rule that a TS can't modify a standard. We will get instructions in a couple of weeks on what we should do. We might start calling them white papers instead.

John Spicer : Isn't that the purpose of a TS ?

Herb : That's the point SC22 is making. They don't expect that point to carry any weight.

Detlef Volmann : What is a white paper ?

Herb Sutter : It is either an ISO or JTC1 thing that already exists. If we have to start using white papers, we will get more instructions on what they are. I will let you know when I have more information.

Walter E Brown. : <quotes a definition of a white paper from a website>

Herb Sutter : There have been updates to the editorial issues. Now we need to have an SC22 resolution for every document we publish to be allowed to have numbers to individual clauses as it is an exception to the ISO rules.

## 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](#)

Herb Sutter There is an update for P1000 for C++26. It's on the straw polls page for Varna.

#### 3.2 Any other business

Jens Maurer : I have secured enough rental audio gear to get all the meeting rooms equipped. I did not have any volunteers for bringing stuff over, so we just have the usual two people bringing audio gear. The rest will be rented. I hope we will have a workable audio setup there.

I'm still in discussions with the hotel about the conference room setups. There is a sponsored dinner on Thursday evening and I have just received one request for one evening session. It will probably be on Tuesday. We need to tell the hotel about the evening sessions in advance. If you want an additional evening session, please let me know as soon as possible.

Herb Sutter : Was that SG7 ?

Jens Maurer : Yes

Herb Sutter : can you double check that it is not just a regular SG7 session. If they need just a regular session, day time would be preferable.

Jens Maurer : They do have a daytime session too. The schedule seems to be appropriate for an evening session. I think we need approval from a subgroup chair for having an evening session.

John Spicer : they need to decide if it is informational or a regular SG session, and then they need to let people know. If it's not making any binding decisions, then anyone can schedule it. Otherwise, a subgroup chair needs to approve it.

Jens Maurer : Ok, I will follow up on that offline.

The other thing is that the hotel is more of a vacation place. Breakfast doesn't start before 7:30. We have sponsored lunch. We can't have lunch before 12:30. We have adjusted the break times.

John Spicer : should we move the whole schedule half an hour later ?

Jens Maurer : There's no traveling from breakfast, so it should work.

Hubert Tong : It might be busy at breakfast time.

Jens Maurer : The hotel is aware that we are starting at 8:30, and I'm not anticipating any trouble.

We can move everything by half an hour. My personal preference would be not to move it. We need to make that decision soon. Is anyone actively seeking to move the schedule to half an hour later ?

John Spicer : Let's keep it for now.

Jens Maurer : Lunch break will stay at 1.5h. I might convince core to shorten that and we can do 30 minutes of issues processing.

Tom Honermann : James updated the Mattermost server. Thank you. Thanks to Sebastian we have a rewritten version of paper bot too. Let us know if you notice any issues.

Paperbot was rewritten for performance reasons and is now faster. Should behave in the same way.

John Spicer : the previous version didn't pick up the latest version of a paper from the wiki unless you specify the revision number.

Tom Honermann : please try it and let me know if it works as you expect it to.

Tom Honermann : Ada (WG9) are able to publish their standard outside of ISO. Why can't we do it ?

Herb Sutter : If one wants to make a new standard and reuse some part of our standard, they need permission from ISO. If you want to do that, let me know and I'll connect you with someone from SC22 secretariat who can help make a request to ISO.

Tom Honermann : Has anyone requested this ?

Herb Sutter : Not lately, but this particular request is currently in progress. If it's only reusing a small limited part of the paper, then it's probably ok. Otherwise, then there are more assertions of copyright and other questions. You need written explicit permission from ISO.

Roger Orr: previous behavior of paperbot was deliberate. If you want a specific revision, that's what you get. Otherwise you get the official version.

John Spicer : The issue of making standards available came up in preparation for SC22 plenary. I'm paraphrasing "we're never ever going to make the standard freely available because many international organizations get a substantial amount of revenue from that". That doesn't mean a request can't be made, but there are strong opinions about that

## **4.1 Review and approve resolutions and issues**

### **4.2 Review action items**

Herb Sutter to update the agenda.

Herb Sutter to look for study group chairs.

Jens Maurer to contact SG7 to clarify whether the evening session is meant to be official.

## **5. Closing process**

### **5.1 Establish next agenda**

Herb Sutter : 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 11:25 N. Am.