

# ISO/IEC JTC1/SC22/WG9 N 668

## Draft Minutes

### Meeting #92 of ISO/IEC JTC 1/SC 22/WG 9

Monday, 8 June 2026

Meeting #92 of WG 9 took place on Monday, 8 June 2026.

The meeting was hybrid.

The meeting started at 15:02 UTC and ended at 16:42 UTC.

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## AGENDA

Opening Orders, Meeting Convenor

### 1. Opening Order: Meeting Convenor

- a. Call to Order & Welcome
- b. Appointment of Meeting Secretary
- c. [ISO Code of Conduct](#) (CoC) review
- d. Administrative Arrangements
- e. Approval of the Agenda ([N667](#)): confirmed.
- f. Approval of [N663](#), Meeting #91 Draft Minutes: confirmed (document status no longer “draft”).

### 2. Member reports

- a. Austria: Johann Blieberger (HoD): No report.
- b. Canada: Brad Moore (HoD): No report.
- c. Finland: Niklas Holsti (HoD, in person):  
Reflected on the WG 9 mailing list queries gotten from C++ experts about about Ada’s style of pre- and post-conditions.
- d. Italy: Tullio Vardanega (HoD, in person): No report.
- e. Portugal: Luis Miguel Pinho (HoD, in person): No report.
- f. Spain: Alejandro Mosteo (HoD): No report.
- g. Switzerland: Nicholas Kaethner (HoD) – **absent**.
- h. UK: Jeff Cousins (HoD):  
same as Niklas Hostli, gotten queries from the UK C++ group, about Ada’s style of pre- and post-conditions.
- i. USA: Tucker Taft (HoD) – **absent** (after giving prior warning).
- j. Guests:  
Bill Ash (CM, INCITS),  
Richard Wai (Canada, remote, arrived at 16:00 UTC)

### 3. Liaison reports

- a. Ada-Europe: Dirk Craeynest, in person.

Ada-Europe would like to inform the WG9 convener that its liaison delegation to Meeting #92, held in hybrid mode on Monday 8 June 2026, will consist of Dirk Craeynest (in-person) and Erhard Ploedereder (remote). The meeting is co-located with the Ada-Europe conference (AEiC 2026) [1], held this week at Mälardalen University (MDU) in Västerås, Sweden. The conference features 5 tutorials on Tuesday, a packed core program on Wednesday and Thursday, and 2 workshops on Friday. At the time of writing, registrations for the conference show 61 participants, and 28 for the 3rd edition of the Ada Developers Workshop [2] (23 in-person and 5 remote).

[1] [www.ada-europe.org/conference2026](http://www.ada-europe.org/conference2026)

[2] [www.ada-europe.org/conference2026/workshop\\_adadev.html](http://www.ada-europe.org/conference2026/workshop_adadev.html)

Recently, the decision was taken to hold the next Ada-Europe conference (AEiC 2027) in Berlin, Germany, from 8 to 11 June 2027, organized in collaboration with Ada-Germany. The conference website with the Call for Contributions will be online later this week [3]. We reconfirm our usual hospitality agreement for WG9, ARG, HRG, and WG23, to co-locate their meetings at our conference

[3] [www.ada-europe.org/conference2027](http://www.ada-europe.org/conference2027)

Investigations are ongoing for future Ada-Europe conferences (AEiC 2028 and further). No decisions have been taken yet, and we remain interested in hosting proposals. Organizing international conferences is increasingly challenging, and we would love to see sponsorship by companies represented in WG 9 or known to attendees of the WG 9 meeting.

Production of the Ada User Journal (AUJ) [4] continues, unfortunately still with large, though decreasing, publication delays. The AUJ publishes a steady supply of material from the various non-journal tracks and workshops at the Ada-Europe conferences, as well as other

Ada events (for example at FOSDEM), besides the traditional News Digest and Conference Calendar sections. Gradually, an increasing number of members opt to receive AUJ issues in digital format only.

There is still no progress to report concerning the merger between the AUJ and Ada Letters. In the meantime, we continue to republish the contents of the AUJ in Ada Letters, giving increased visibility to the work of the authors.

[4] [www.ada-europe.org/auj](http://www.ada-europe.org/auj)

As mentioned in October, we had changed our plans for the publication of the Ada 2022 RM in Springer's LNCS series and had in June provided the manuscript to Springer for a "Consolidated Ada 2022 Reference Manual" based on the Corrigendum, for which they estimated a publication date in November 2025. However, due to the switch from Corrigendum to Amendment, we had to change plans again. Ada-Europe asked Randy Brukardt to produce a new Consolidated Ada 2022 RM in 3 LNCS-formatted volumes but now based on combining the original Ada 2022 RM with the then-to-be-produced Amendment. That work was finalized in December 2025, several iterations of the master copy for the new Consolidated RM were reviewed in January 2026, and the manuscript was provided to Springer early February 2026. Springer is now reviewing the documents, and we are awaiting their feedback. As soon as we've seen the print proofs of the covers and s.c. "front- and back-matter", we'll finalize the group order for Ada-Europe's interested members.

**b. SIGPLAN HILT:** Alok Srivastava and Tucker Taft

No report. Tullio will discuss with Tucker Taft as to whether there is sufficient energy in the SIGPLAN HILT group to continue to be a liaison to WG 9. (See **AI-92-1**.)

**c. WG 23:** Erhard Plödereder (reported by Tullio, as Erhard virtually joined the meeting only at 16:55 UTC.)

WG 23 meetings continue, on a three-week schedule, for producing the Java and C++ Parts of ISO IS 24227, respectively.

In my opinion, the Java part is ready for submission. There is hesitation, though, to submit for DIS because, despite occasional reminders, no Java group has commented on its contents as yet.

C++ work is progressing slowly, as work is done by a very small (but reasonably steady) group of expert participants.

For a summary status of other available Parts, see the minutes of WG 9 meeting #87 ([N646](#)). No decision has been made to start work on a Rust part, discussed as a possibility last year.

**d. Fortran, INCITS/PL22.3**

Notes from Tullio: during meeting #91, Pat Rogers, at his last episode of convenorship, reported that Van Snyder, the until-then Fortran's liaison to WG 9, contacted him to advise he had retired and could no longer serve as liaison. Van suggested Pat should contact Steve Lionel ([steve@stevelionel.com](mailto:steve@stevelionel.com)), the current chair of SC 22 / WG 5, to seek help in finding a replacement. Pat did that, and Steve promised to look for an interested party, defaulting to himself if the duties are light. Tullio shall follow this up. (See **AI-92-2**.)

**4. Convenor's report**

**a. Status of Amendment submitted to ISO/CS and resulting actions.**

The SC 22 level ballot on ISO/IEC 8652:2023/CD Amd 1 opened on 2026-05-12, with due date on 2026-07-07.

**b. SC 22 matters and implications.**

Plenary meeting take place on 2026-08-25 (this time in virtual mode). Effort is ongoing between ISO and IEC to alignment of the ISO/IEC Directives, Part 1 (procedures for the technical work). Bill Ash advised the text of these directives will be available in July. By the time of the next WG 9 meeting, Tullio should be able to report on their implications.

**5. Project editor reports (as needed)**

**a. IS 8652:2023 (Information Technology--Programming Languages - Ada)**

Steve Baird, Randy Brukardt

Since the last report (Oct 2025), the ARG has met three times electronically: Dec 2025; Feb 2026; May 2026. The ARG-approved AIs intended for review at this WG 9 meeting were listed in a message Randy sent to the WG 9 mailing list on May 1 and are also given at **Item 6.a** in the agenda for this meeting.

Good progress has also been made on some innovative language design proposals that are not yet ready for WG 9 review.

**b. IS 15291:1999 (ASIS)**

Bill Thomas, Greg Gicca

This IS entered periodical review 2026-04-15, with due date 2026-09-02. Tullio noted that ASIS continues to be relevant as there are commercial tools based on it, which draw value from being based on a current ISO standard.

**c. [TR 15942:2000](#) (Guidance for the Use of Ada in High Integrity Systems)**

Niklas Holsti

Prior to this meeting, Niklas posted a [Revision plan proposal](#), for discussion. Niklas orally presented this document and some discussion followed. Niklas' effort was lauded by WG 9 delegates, his proposal was approved, some concern was expressed for the magnitude of the ensuing work. An action plan, with associated milestones, was outlined. The first most urgent milestone will be the identification of the standards to be considered in the revision of the technical contents of this document. (See **AI-92-3**.)

**d. [IS 18009:1999](#) (Conformity Assessment of an Ada Language Processor)**

Erhard Plödereder.

This IS was confirmed on 2026-03-06. No comments received since; no actions needed.

**e. [TS 24718:2025](#) (Guide for the Use of the Ravenscar Profile in High Integrity Systems)**

Alan Burns, Tullio Vardanega:

Publication completed (public access). No further action needed for now.

**f. [TR 24772-2:2020](#) (Guidance to avoiding vulnerabilities in programming languages – Vulnerability descriptions for the programming language Ada)**

Joyce Tokar

Publication completed (behind pay wall). No further action needed for now.

**g. [TR 24772-6 WD](#): (SPARK Part of Programming Language Vulnerabilities)**

Stephen Michell, Erhard Plödereder, Tullio Vardanega

Erhard: no action other than WG 23 to push it out, possibly as an IS. (To be followed up.)

## 6. Rapporteur group reports

### a. Ada Rapporteur Group

Steve Baird, Chair

This is the eighth batch of ARG-approved [bug fixes and improvements AIs to Ada 2022](#) submitted to WG 9 approval (the second batch past the production of Amendment 1):

- AI22-0129-1/06 2026-03-12 -- Usage example for Protected Type with Dynamic Predicate
- AI22-0141-1/06 2026-04-30 -- Aspects unspecifiable for categories of types
- AI22-0142-1/05 2026-04-30 -- Relax matching index constraint rules
- AI22-0143-1/05 2026-04-30 -- Make new UTF Decode functions consistent
- AI22-0144-1/05 2026-03-20 -- Clarify Data\_Error condition in Text\_IO.Get
- AI22-0145-1/02 2025-12-16 -- 'Old should work on values as well as objects
- AI22-0146-1/04 2026-04-30 -- Expected profile of subprogram-valued aspects
- AI22-0149-1/04 2026-03-26 -- Resolution and ambiguity for prefixed views
- AI22-0150-1/06 2026-04-30 -- User-defined indexing and access types
- AI22-0156-1/03 2026-04-03 -- Minor presentation issues

The group approved. (See **Resolution 92-3**.)

### b. Annex H Rapporteur Group

Joyce Tokar, Chair

No report from the chair.

Tullio, and Pat before him, had email discussions with Joyce on the future of this group, given that she has no residual energy to steer it. Joyce's advice was that the group might be merged with the ARG in the way of keeping it alive (as an alternative to its dissolution). Tullio's view, presented to the group is that the HRG, as a rapporteur group themed on the use of Ada in high-integrity systems, has run its course, and other themes should be identified as the focus of a "new" group with renewed membership. Discussion ensued, which led to **AI-92-4**.

## 7. Review of open Action Items and unimplemented resolutions

*This is the "To Do" list for WG 9. Some are informal action items assigned to various participants. Some are formal resolutions, which are not yet implemented. Some items are awaiting action by other groups.*

**AI-78-3:** WG 9 members should individually prepare to discuss WG 9 work items after delivery of Ada 202x. Examples could include: additional activities for the HRG along reliability and security lines; co-joining efforts with the real-time workshops to produce standards-related documents; adoption of SPARK and its environments into the WG 9 scope.

Status: Ongoing.

**AI-81-3:** Convenor to get the WG 9 documents transferred to the ISO Documents facility.

Status: Open, pending resolution of retaining public free access to the documents in the official ISO document system.

**AI-89-1:** Randy to get an alternate document generation installation set up by end of September 2025.

Status: Open.

**AI-90-6:** Tucker to instantiate a small group that will refine the community inputs into focus areas for the next revision to the language.

Status: Done.

**AI-90-7:** Convenor to probe Joyce regarding the HRG, inquiring whether she wants to remain as the Chair, and what the HRG wants to do in the future. (For example, would it want to take on the effort of revising TR 15942?)

Status: Done. Superseded by **AI-92-4**.

**AI-90-8:** Tucker to post the need for an editor to take on the revision of TR 15942, given Alejandro's release from the effort.

Status: Closed. (Niklas Holsti graciously volunteered and got officially assigned the work item, after managing to restore his membership to WG 9.)

**AI-91-1:** Dirk to post editor position invitation for TR-15942 on comp.lang.ada

Status: Done.

**AI-91-2:** Tucker to make the minor editing requested by Randy to the [ARG Instructions document](#). (Tullio to assign it an N-document number and place it into the WG 9 repository.)

Status: Done. N-document is now [N666](#).

## 8. Committee as a Whole

Informal discussion on what to do of the HRG.

## 9. Unfinished business

None.

## 10. New business

None.

## 11. Scheduling of future meetings

The group agreed to hold:

- a virtual (remote-only) meeting on **Tuesday, 1 December 2026 at 16:00 UTC**,
- a hybrid meeting on **Tuesday, 8 June 2027, at 15:30 UTC**, to be held in conjunction with the AEiC 2027 conference at Berlin, Germany. Ada-Europe will graciously provide the meeting room facilities for group members who will be able to attend in person.

Both meetings will use ISO-provided Zoom coordinates.

## 12. Review of new Action Items

**AI-92-1:** Tullio to discuss with Tucker Taft as to whether there is sufficient energy in the SIGPLAN HILT group for it to continue to be a liaison to WG 9.

**AI-92-2:** Tullio to follow up with Steve Lionel to restore a Fortran liaison to WG 9.

**AI-92-3:** Niklas to itemize the list of basic standards to consider in the revision of TR 15942:2000. (The group should provide feedback on that as well as help Niklas get access to the corresponding documents.)

**AI-92-4:** Tullio to contact the current HRG members to advise them of WG 9's intention to close the group, and to seek suggestions from them for new thematic directions to give to a new group that would do good to Ada.

## 13. Final consideration of resolutions

**Resolution 92-1:** The group approved the minutes of meeting #91, which are now posted as definitive as [N663](#).

**Resolution 92-2:** The group approved Niklas Holsti's [revision plan](#) for TR 15942:2000.

**Resolution 92-3:** The group approved the AIs presented by the ARG convenor Steve Baird as listed at agenda item 6.a.

**Resolution 92-4:** The group confirmed the following composition of the ARG:

Steve Baird (rapporteur), Raphaël Amiard, John Barnes, Randy Brukardt, Alan Burns, Arnaud Charlet, Jeff Cousins, Gary Dismukes, Claire Dross, Robert Duff, Edward Fish, Christoph Grein, Niklas Holsti, Pascal Leroy, Brad Moore, Alejandro Mosteo, Jean-Pierre Rosen, Justin Squirek, Tucker Taft, Tullio Vardanega, Richard Wai.

**Resolution 92-5:** The group confirmed the following composition of the HRG, for the purposes of implementing **AI-92-4**:

Joyce Tokar (rapporteur), Steve Baird, John Barnes, Ben Brosgol, Alan Burns, Rod Chapman, Gary Dismukes, Bob Duff, Stephen Michell, Brad Moore, Miguel Pinho, Erhard Plödereder, George Romanski, Jean-Pierre Rosen, S. Tucker Taft, Tullio Vardanega.

**Appreciation 92-5:** The group expressed appreciation for Brad Moore's kind volunteering to serve secretary for meeting #92.

**Appreciation 92-6:** The group expressed appreciation for Ada-Europe's hospitality for this meeting at the MDU premises in Sweden, where the AEiC 2026 conference is being held.

**14. Recess**

**REFERENCES**

The WG 9 document log is located at <http://www.open-std.org/jtc1/sc22/wg9/documents.htm>.