# ISO/IEC JTC1/SC22/WG9 N599

### Draft Meeting Minutes

### Meeting #76 of ISO/IEC JTC 1/SC 22/WG 9

### Friday 14 June in Warsaw, Poland

In accordance with Resolution 75-2, meeting #76 was held the morning of Friday, 14 June, 2019 in Warsaw, Poland, in conjunction with [Ada Europe 2019](https://ae2019.edc.pl/). The meeting started at 09:00 local time.

The detailed agenda was distributed as [N598](http://www.open-std.org/jtc1/sc22/wg9/n598.pdf).

Remote access to the conference was available via WebEx.

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* [TR 24772-2](#TR24772): Joyce Tokar
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* [Report of Ada Rapporteur Group](#ARG): Steve Baird, Chair
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### Opening Orders

Call to Order

Appointment of Meeting Secretary

Welcome and Administrative Arrangements

Approval of the [Agenda](#Agenda)

Approval of [[N5](http://www.open-std.org/jtc1/sc22/wg9/n585.docx)9](http://www.open-std.org/jtc1/sc22/wg9/n595.pdf)5: Meeting #75 Minutes.

Welcome Guests (Alok Shrivastava, J.P. Rosen)

### HOD Reports

### Canada – Brad Moore (HOD)

### Italy – Tullio Vardanega (HOD)

Nothing to report, other than continued support for WG 9 at SC 22.

### Portugal – Luis Miguel Pinho (HOD)

Nothing to report since the last meeting.

### Spain – Juan Antonio de la Puente (HOD)

There is nothing to report since the last WG 9 meeting.

The Spanish delegation for this meeting of WG 9 is Juan Antonio de la Puente (HOD).

### Switzerland – Nicholas Kaethner (HOD)

### UK – Jeff Cousins (HOD)

Activity of the UK NB’s Ada Panel is restricted to the convenor (myself) distributing a progress report every few months, plus the occasional e-mail. For historical reasons, our e-mail list was provided by the “Association of C and C++ Users” and administered by the Fortran convenor! Administration has now passed to me, and the e-mail list been updated and corrected.

The UK delegation is John Barnes, Alan Burns and Jeff Cousins (HoD) for this meeting of WG 9.

### USA – Tucker Taft (HOD)

There is nothing to report since the last WG 9 meeting.

### Guests, if any

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### Liaison Reports and Introductions

**Ada Europe –** Dirk Craeynest

Ada-Europe would like to inform the WG9 convener that it will send a 2-person Ada-Europe liaison delegation to Meeting #76 in Warsaw, Poland, on Friday 14 June 2019.

The delegation consists of:

- Erhard Ploedereder

- Dirk Craeynest (presenter)

The next Ada-Europe conference [1] will be held in the week of June 08-12, 2020, in Santander, Spain, and we reconfirm our usual hospitality agreement for WG9, ARG and HRG, as well as for WG23. The Preliminary Call for Papers was handed out at this year's conference, and is available at the conference web site.

The 2020 edition of our conference will continue the major revamp in the registration fees, redesigned to extend participation and to reward contributors.

[1] http://www.ada-europe.org/conference2020

We reconfirm our willingness to support the Ada standardization and related activities.

Ada-Europe is happy to report a continued healthy situation with the Ada User Journal (AUJ) [2]. Four issues are published each year.

The Journal continues printing material from the industrial track and technical presentations of the Ada-Europe conference, as well as reports of the International Real-Time Ada Workshops. The Journal provided the proceedings of the Workshop on Challenges and New Approaches for Dependable and Cyber-Physical Systems Engineering (DeCPS 2018), as well as the Runtime Verification and Monitoring Technologies for Embedded Systems Workshop (RUME 2018),

both co-located with Ada-Europe 2018, and plans to publish this year the proceedings of the DeCPS workshop co-located with Ada-Europe 2019. The AUJ also published the proceedings of the 2018 International Real-Time Ada Workshop.

Reports on the Ada standardization process are planned to be periodic. The AUJ is publishing the ISO technical report Guide for the use of Ravenscar and plans to publish the Ada part of the ISO technical report on Language Vulnerabilities, to provide earlier access to these documents. The AUJ also continues with its traditional Quarterly News Digest, Conference Calendar and Forthcoming Events sections.

In the past year, the collaboration with Ada Letters resulted in the simultaneous publication of the Real-Time Ada Workshop proceedings in the June 2018 issues of the Ada User Journal and Ada Letters.

[2] http://www.ada-europe.org/auj

**SIGAda –** Drew Hamilton

**WG 23 –** Erhard Ploedereder

The three documents submitted by WG23 last year (the language independent Part, the Ada Part, and the C Part of TR 24772) have passed their ISO ballots. They are now in final editing by ISO prior to publication (already for several months).

Once Part 1 of TR 24772 comes out of editing, it becomes an International TR and the previous version, including all its annexes, is taken off the list of active ISO documents. This means that the annexes for Python, Ruby, PHP, and SPARK will be removed as active documents.

It is therefore important to get the SPARK Part updated to get it back on the list of active documents. WG9 should assist this process and WG23 in looking towards WG9 helping in organizing the completion of the SPARK Part of the TR. A draft has been produced and coordinated with AdaCore, but final touches are needed and a few sections need to be completed before we can consider the Part ready for balloting. An attempt at scheduling a face-to-face meeting with AdaCore representatives during the summer has failed; we now try to complete the work by teleconferences.

Meanwhile a first draft of a Java annex has materialized thanks to third party support. A meeting for initial review of the Java Part is being scheduled for September 2019.

WG23 has focused mainly on getting the C++ Part written by WG21, Subgroup 12. Face-to-face meetings took place in San Diego on November 8th and 9th, and in Kona on Feb 21st and 22nd 2019, in both cases jointly with WG21 meetings. The next such meeting will be in Cologne on July 16th and 17th, hopefully resulting in a first draft of the Part which then can be polished mainly in teleconferences.

Since the last WG9 meeting and apart from the two face-to-face meetings, WG23 conducted two-hours telecons on December 17th, 2018, January 24th and May 6th , 2019, to discuss the comments on submitted Parts, details on Parts under work, and mainly procedural issues and timelines.

On a personal note, I regret to inform you that my further physical participation in ISO Working Groups is at risk, since, with my retirement from my university on Sept 30th of this year, I’ll lose the necessary financing for my travel and a replacing funding source has not been found yet.

**Fortran, INCITS/PL22.3** – Van Snyder

Fortran 2018 was published by ISO in November. The new features were described in paper N2161, available from ISO LiveLink and from https://wg5-fortran.org/documents.html.

WG5 and Fortran National Body committees are now gathering proposals for the next revision.

The most recent WG5 meeting was in Berkeley, California, on the grounds of the Lawrence Berkeley National Laboratory, 11-15 June 2018. At that meeting, it was agreed that generic programming, exceptions, and support for containers are high-priority items for the next revision. Numerous minor items were proposed.

The most recent INCITS/PL22.3 meeting was in Las Vegas 11-15 February 2019.

I personally have advocated that generic programming facilities ought to be modeled on Ada Generic Packages, since they have a very long history. Others advocate schemes more along the lines of C++ templates, and macros. Some facilities were agreed at the February PL22.3 meeting that would be useful independently of whatever facility is eventually agreed. Beyond that, there was discussion but no agreement on the broad picture.

I personally have advocated that exception handling ought to be modeled on Ada exception handling. Some delegates insist it's too difficult and has too-large overhead even if exceptions do not occur. I reported my correspondence with Ada committee members that most Ada processors do not have excessive expense when exceptions do not occur, but some delegates continue to insist that cannot be true. Beyond that, there was very little discussion of exception handling at the February PL22.3 meeting.

There was no discussion of support for containers at the February PL22.3 meeting. I had put forward a paper that argued that iterators are useful for containers, but the paper was not processed.

Several defect reports concerning the standard just published in November 2018 were processed. We already have eleven. These mostly concern internal contradictions. For example, normative text might require or permit something in one subclause, and prohibit it in another, or have a list that intends to include everything that appears (or is implied) in disparate locations -- but does not.

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### Convenor's Report

### Activities since the Last Session

The Convenor successfully convinced the SC 22 Chair and SC 22 Secretary that Ada is different, e.g., the standard is freely available and that the publication process starts with a “finished” product delivered from WG 9. The Secretary explained the shortest possible publication track and some allowed short-cuts, such that an interval of approximately one year was envisioned for publication after delivery.

The Convenor also notified the SC 22 Chair and Secretary that WG 9 might be introducing a delay for the sake of reviewing portions of the draft revision. Further details and status will be provided to them in the annual report and Plenary in August.

**Meeting Objectives**

The major objectives for this meeting are:

1. Determine Ada 202x schedule in light of the ARG request
2. Plan WG 9 meetings in the future
3. Develop Technical Reports or Standards improving the Ada libraries

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### Project Editor Reports (as needed)

**IS 8652 (Information Technology--Programming Languages - Ada)** (Steve Baird, Randy Brukardt)

### IS 15291 (ASIS) (Bill Thomas, Greg Gicca)

**TR 15942 (Guidance for the Use of Ada in High Integrity Systems)** (Ben Brosgol)

### IS 18009 (Conformity Assessment of an Ada Language Processor) (Erhard Ploedereder)

No comments received and no activity to report.

**TR 24718 (Guide for the Use of the Ravenscar Profile in High Integrity Systems)** (Alan Burns)

The format overhaul required by ISO is largely complete, per the changes specified by their initial feedback. Corrections received from the original authors will addressed next week, prior to a final review by the authors. The document will then be sent to ISO for their editorial review, which will likely require additional changes. (Pat Rogers)

**TR 24772-2 (Guidance to avoiding vulnerabilities in programming languages – Vulnerability descriptions for the programming language Ada)** (Joyce Tokar)

**TR 24772-6 (SPARK part of TR 24772)** (Stephen Michell and Tullio Vardanega)

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### Rapporteur Group Reports (as needed)

**Rapporteur Report ARG**

Since the June 2018 report, the ARG has met 8 times: twice in person (June 2018 in Lisbon and Oct 2018 in Massachusetts) and 6 electronic meetings.

At these 8 meetings, 62 AIs (Ada Issues) have been approved by the ARG.

These 62 AIs can be found at http://ada-auth.org/ai-files/ARG\_AI12.zip .

These would normally be forwarded, after a fairly brief editorial review period, to WG 9 for disposition.

In this case, however, the ARG is postponing formal delivery of these AIs to WG 9 as part of an extended review process.

This is in response to a request from AdaCore to allow additional time for prototyping and evaluation of the new features being added, particularly (but not limited to) those features relating to language support for parallel execution. AdaCore is making resources available to support this effort. [Disclaimer: The author of this report, Steve Baird, is an employee of AdaCore.]

Other alternatives were discussed (e.g., trying to identify noncontroversial changes and approving those separately while postponing others) and it was agreed that extending the review period was the best of the available alternatives.

AdaCore is targeting a period of one year for this, with the understanding that it is possible that as much as two years might be required.

Given that the last major revision of Ada was in 2012, this would still allow for only a 10-year gap between revisions of the language standard.

The ARG requests the approval of this schedule change by WG 9.

**Rapporteur Report HRG**

Nothing to report.

**Numerics Rapporteur** **Group**

Nothing new to report for the Ada math library. (Jon Squire)

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**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 simply in suspense awaiting action by other groups.

**AI-73-8:** Pat to reformat TR 24718 with the required changes per ISO.

*Status*: Final minor revision is underway, based on review by the original authors.

**AI-74-1:** Pat to contact relevant parties within AdaCore re: SPARK part of TR 24772-6.

*Status*: Closed. Work is under way by Stephen Michell and Tullio Vardanega, with help from Yannick Moy of AdaCore.

**AI-74-2:** Pat to follow up with AdaCore for a person to act as leader of revision of TR 15942 (Guide for the use of the Ada programming language in high integrity systems).

*Status*: Closed. Replaced by AI-76-1.

**AI-74-4:** Tucker to contact Florian regarding his future availability.

*Status*: Closed due to no response.

**AI-75-1:** Joyce will try to find ISO contact re: Fast Track process.

*Status*: Closed. The Fast Track process is no longer available.

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### Committee as a Whole

Current ISO vote on PCTE

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### Unfinished Business

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### New Business

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### Scheduling of Future Meetings

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Meeting #77 will be held on the morning of Saturday 5 October, 2019, in the Lexington offices of AdaCore.

Meeting #78 will be held in conjunction with Ada Europe 2020 in Santander, Spain, on Friday 12 June 2020 at 9:00AM local time.

**Review of New Action Items**

**AI-76-1:** Tullio and Juan to contact volunteers for work on TR 15942 (Guide for the use of the Ada programming language in high integrity systems). Pat will verify final possibility of support within AdaCore.

**AI-76-2**: Pat to initiate pursuit of new national body members from vendors’ customers.

**AI-76-3:** The Convenor will send a letter to Ada vendors, the high-performance community, and the Ada community, requesting they comment on the draft, especially the parallelism features.

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**Final Consideration of Resolutions**

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**Resolution 76-1:** The meeting minutes of meeting 75 contained in document [N59](http://www.open-std.org/jtc1/sc22/wg9/n595.docx)5 are approved.

*This resolution passed unanimously.*

**Resolution 76-2:**

ISO/IEC JTC 1/SC 22/WG 9 schedules future meetings as follows:

Meeting #77 will be held on the morning of Saturday 5 October, 2019, in the Lexington offices of AdaCore.

Meeting #78 will be held in conjunction with Ada Europe 2020 in Santander, Spain, on Friday 12 June 2020 at 9:00AM local time.

*This resolution passed unanimously.*

**Resolution 76-3:** WG 9 will hold an email votewhether to delay the release of the draft standard with text agreed upon in this meeting.

*This resolution passed unanimously.*

**Resolution 76-4:**

ISO/IEC JTC 1/SC 22/WG 9 continues the Ada High-Integrity Rapporteur Group (HRG) until the next plenary meeting and expresses its grateful appreciation to the Rapporteur and the members for their continuing service.

Joyce Tokar is continued as Rapporteur.

The membership of the HRG is designated to be: Steve Baird, John Barnes, Ben Brosgol, Alan Burns, Rod Chapman, Gary Dismukes, Bob Duff, Michael Gonzalez Harbour, Stephen Michell, Brad Moore, Miguel Pinho, Erhard Ploedereder, Juan Antonio de la Puente, George Romanski, Jean-Pierre Rosen, S. Tucker Taft, Joyce Tokar, and Tullio Vardanega.

The Convenor of WG 9 is authorized to act for WG 9 between meetings in appointing additional members of the HRG. In doing so, he shall consult with the Rapporteur and the National Body or Liaison Organization nominating the member.

Rapporteurs are permitted to allow other individuals to observe the deliberations of the Rapporteur Group. The admission of observers and the extent of participation permitted to observers are at the discretion of the Rapporteur with the concurrence of the membership of the Rapporteur Group.

*This resolution passed unanimously.*

**Resolution 76-5:**

ISO/IEC JTC 1/SC 22/WG 9 continues its Ada Issues Rapporteur Group (ARG) until the next plenary meeting and expresses its grateful appreciation to the Rapporteur and the members for their continuing service.

Steve Baird is continued as Rapporteur.

The membership of the ARG is designated to be: Raphaël Amiard, Steve Baird, John Barnes, Randy Brukardt, Alan Burns, Jeff Cousins, Gary Dismukes, Robert Duff, Pascal Leroy, Brad Moore, Erhard Ploedereder, Jean-Pierre Rosen, Ed Schonberg, Justin Squirek, Tucker Taft, Tullio Vardanega, and Richard Wai.

The Convenor of WG 9 is authorized to act for WG 9 between meetings in appointing additional members of the ARG. In doing so, he shall consult with the Rapporteur and the National Body or Liaison Organization nominating the member.

Rapporteurs are permitted to allow other individuals to observe the deliberations of the Rapporteur Group. The admission of observers and the extent of participation permitted to observers are at the discretion of the Rapporteur with the concurrence of the membership of the Rapporteur Group.

*This resolution passed unanimously.*

**Resolution 76-6:** ISO/IEC JTC 1/SC 22/WG 9 expresses its grateful appreciation to Tucker Taft for acting as secretary for Meeting #76.

*This resolution passed unanimously.*

**Resolution 76-7:** ISO/IEC JTC 1/SC 22/WG 9 expresses its grateful appreciation to Maciej Sobczak and Radoslaw Szymanski (with help from Tullio Vardanega) for hosting meeting #76.

*This resolution passed unanimously.*

**Resolution 76-8:** ISO/IEC JTC 1/SC 22/WG 9 expresses its grateful appreciation to Clyde Roby for maintaining the document list page.

*This resolution passed unanimously.*

**RECESS**

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The Convenor recessed the meeting at 11:40am, subject to a call to resume.

**References**

See <http://www.open-std.org/jtc1/sc22/wg9/documents.htm> for the WG 9 Document Log, including the ability to download the documents.