

# ISO/IEC JTC1/SC 22/WG 9 N610

## Draft Minutes

### Meeting #79 of ISO/IEC JTC 1/SC 22/WG 9

Monday, 11 January 2021 (virtual only)

Meeting #79 of WG 9 was held the morning of 11 January 2021. Per ISO guidance, the meeting was strictly virtual due to the COVID-19 pandemic. The meeting started at 16:00 UTC.

The detailed agenda was distributed as N609.

Remote access to the conference was available via WebEx.

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- [IS 15291](#): Bill Thomas and Greg Gicca
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- [IS 18009](#): Erhard Ploedereder
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## **Opening Orders**

Call to Order

Appointment of Meeting Secretary

Welcome and Administrative Arrangements

Code of Conduct

Approval of the [Agenda](#)

Approval of N607: Meeting #78 Minutes.

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## **Reports and Introductions**

**Austria – Johann Blieberger (HoD)**

**Canada – Brad Moore (HoD)**

Welcome to Richard Wai as a new member.

**Finland – Niklas Holsti (HoD)**

**Italy – Tullio Vardanega (HoD)**

No direct activity specific to WG 9.

Indirectly, I continue to actively participate in the work of WG 23 in the project of transforming all of WG 23 TRs into International Standards (which is needed to ensure that they are made publicly available by ISO). This is pertinent to WG 9 as Ada and SPARK will each obtain such a document.

**Portugal – Luis Miguel Pinho (HoD)**

**Spain – Alejandro Mosteo (HoD)**

Nothing to report.

## **Switzerland – Nicholas Kaethner (HoD)**

### **UK – Jeff Cousins (HoD)**

Activity of the UK NB's Ada Panel has remained limited to the convener (myself) distributing a progress report every few months, plus the occasional e-mail.

John Barnes has updated his book "Programming in Ada 2012" in order to get the Ada 2012 baseline correct before moving forward with Ada 202X.

Jeff Cousins has written "An Overview of Ada 202x" for the September 2020 edition of the Ada User Journal. It is a compendium of the previous articles, updated and extended, and sorted to mostly group the AIs according to the instructions to the ARG from WG 9 (to show that the ARG had been working according to its directions). It would have been preferable to have waited till the next issue, but they were short of material. As it happens, the issue has yet to appear, even online.

The UK delegation is Jeff Cousins and John Barnes for this (virtual) meeting of WG 9.

### **USA – Tucker Taft (HoD)**

**Guests – ?**

## [AGENDA](#)

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## **Liaison Reports and Introductions**

### **Ada Europe – Dirk Craeynest**

Ada-Europe would like to inform the WG9 convener that its liaison delegation to Meeting #79, held online, on Monday 11 January 2021, will consist of Erhard Ploedereder. I apologize for not being available at the time of the meeting.

We mainly want to remind everyone that the next Ada-Europe conference (AEiC 2021) is scheduled to take place in Santander, Spain, in the week of 7-11 June.

Despite the COVID-19 situation which led to the cancellation of the previous edition of the conference, there is a firm commitment to celebrate the 2021 edition in any case. The initial goal is to have a mixed model with both in-person and remote participation. If the situation so requires it, the conference would be held as a full virtual event.

We reconfirm our usual hospitality agreement for WG9, ARG, HRG, and WG23, to co-locate their meetings as in-person, hybrid or virtual events, depending on the COVID-19 situation.

The Call for Papers was distributed digitally and is available on the event's web site [1]. The first (extended) submission deadline is later this week (14 Jan). Work-in-Progress papers and Invited Presentation proposals may be submitted until 31 March.

[1] <http://www.ada-europe.org/conference2021>

We will provide a more complete report for meeting #80 in June 2021.

### **SIGAda – Drew Hamilton**

### **WG 23 – Erhard Ploedereder**

Since the last virtual WG9 meeting, WG23 has increased its workloads significantly: initially we had biweekly conference calls and, since mid-August, the 3-4 hours Zoom meetings are now weekly (on Monday; guests welcome, I presume), focusing on Parts of TR 24227 in turn. The present status is:

- Java is furthest along. The Part should be finished within a few months.
- Python follows in the tracks of Java and should be finished in 2021.
- C++ has got significant interest from SG12 within WG21. Consequently more C++ people are involved with the writing of the Part to the extent that editing the document has been transferred to GitHub to make cooperation on the text easier. Still, there is significant work ahead and unlikely to be finished in 2021.
- SPARK is getting off the ground these days. Rod Chapman (original author of the SPARK Annex and now on contract with AdaCore) has taken on the task to upgrade the outdated Annex of TR 24772:2013 to match the new SPARK language and the new Part 1. WG23 thanks WG9 for any help it may have given to make this happen.
- A transcription of TR 24772-1 into an International Standard (IS) is one or two meetings away from being completed. See also below.
- (Fortran is on hold until the Fortran WG meets again. The already published Ada and C Parts await a reaction from the authoring WGs about the possible conversion to an IS.)

As already reported last time, ISO and IEC – in a misinterpretation of policies formulated a long time ago – have instituted a policy that Technical Reports are no longer made available for free, while International Standards might be freely available at the discretion of IEC and ISO. Consequently WG23 has turned Part 1 into the format of an IS including, in particular, required compliance rules. WG23 will submit the document for standardization on the fastest track possible. The effort for the conversion was surprisingly small: a couple of meetings (with representatives of most groups writing other Parts) sufficed. Obviously, the other Parts should follow if their authors agree. I have asked Pat Rogers to put this question and related details with respect to the Ada Part on the agenda of today's meeting. Steven Michell has produced a draft of what the Ada Part as an IS might look like. I recommend that WG9 members take a look prior to the meeting.

In any case, WG23 kindly asks the members of WG9 to influence their national organizations to express the required interest and possibly their participation in turning all Parts of TR 24772 into International Standards, when the related Work Item Proposals by WG23 are decided upon by ISO.

Questions:

- 1) Should we turn the Ada Part into an IS? Yes (resolution; approved)
- 2) Can we have technical assistance by participating in the WG 23 call-in? Contact SM if not already on email. WG 23 can forward messages to WG 9 members. (resolution; approved)
- 3) Does WG 9 want to vote on submission of the Ada Part of the WG 23 document? (yes, resolution approved)
- 4) Will a sufficient number of WG NB members approve and participate?  
Motion: WG 9 wishes to remind members that an NWIP for Part 2 will be created and request WG 9 NB participation. (resolution; approved)

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

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## Convenor's Report Activities since the Last Session

I submitted the annual report to SC 22 for 2018-2019 in [N602](#).

SC 22 has been told to ensure its Working Groups have all their official "N" documents in the recently released "ISO Documents" online repository. WG 9 has been called out specifically. I have been working with the SC 22 Chair and Committee Manager to see how to move our existing files over. Initially, the new ISO repository had no means of making the documents publicly available so the SC 22 Chair said we can all wait. I am pursuing that issue. In addition, there was no bulk upload capability without renumbering the documents. I am told that is now possible and am working with ISO to determine how to do so. I'll be doing the actual transfer.

I am coordinating with the SC 22 Chair and Committee Manager regarding submitting the Ada revision to SC 22. The plan is to use an 18-month "accelerated timeframe" project, which is the shortest available. This gives a special privilege: if the Draft International Standard (DIS) ballot receives no comments, the result goes straight to publication instead of requiring another SC 22 ballot. Under the accelerated timeframe process we can start the document at the Committee Draft (CD) stage, as we have done in the past. The ideal situation is that there is a revision ballot (which includes a CD ballot folded into it), and immediately afterward a DIS ballot, and then the document goes straight to publication. If this happens, it will take much less than the 18-month maximum. However, the editing process imposed by ISO may take significant time.

I am coordinating with the SC 22 Chair and Committee Manager regarding the copyright for the standard. SC 22 has no written history of the agreement made between the AJPO (presumably) and ISO regarding the copyright. (Nor did they have any history of the freely available status.) As a result, the relatively new SC 22 Chair and Committee Manager had no knowledge of it. They have been brought up to date, but the issue is unresolved. Their opinion is that we may need to get some DoD person to tell ISO that the DoD won't release the copyright. I hope not, as that person might be impossible to locate. Of course, there are other copyright holders as well, so it is a mess. I am pursuing the matter with ISO.

Detailed planning for the revision will be discussed under the Committee as a Whole section.

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## Project Editor Reports (as needed)

**IS 8652 (Information Technology--Programming Languages - Ada)** (Jeff Cousins, Randy Brukardt)

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

**TR 15942 (Guidance for the Use of Ada in High Integrity Systems)** (Alejandro Mosteo)

I am currently reading the document and getting familiar with its contents and the kind of changes that will be necessary. No editing has taken place yet.

Questions for discussion:

1) According to my reading, SPARK is only referenced in passing (not even by name) as part of more general comments on Correctness by Construction. When the report was written SPARK still used Ada comments for annotations. Given how much SPARK has progressed, how prominently should it figure in the report?

2) The document is in terms of Ada 95. Should it be updated for Ada 2005, 2012 or 202X? I would prefer the latter.

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

No comments were received and no technical activities are to be reported.

ISO has issued a vote on the renewal of this Standard (without involving WG9?). The vote ended in early December. The ISO Marketplace tells that ISO/IEC 18009:1999 has been reconfirmed in 2020 and sells the 1999 version as current. ISO failed to officially notify the project editor about the outcome of the vote.

Also, I have been told that someone within ISO has decided that only members of national delegations can be project editors. If this is so, WG9 eventually needs to designate a new project editor for IS 18009.

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

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

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## **Rapporteur Group Reports (as needed)**

### **Rapporteur Report ARG**

Since the last report (June 2020), the ARG has met (electronically) 5 times, keeping to the "every 6 weeks" schedule mentioned in the previous report. We are very close to reaching the goal of resolving all of the "open" AIs (Ada Issues) for Ada 202X, but we are not quite there yet.

At those 5 meetings, 33 AIs were approved by the ARG:

- AI12-0302-1/05 Default Global aspect for language-defined units
- AI12-0344-1/03 Procedural iterator aspects
- AI12-0354-1/01 Semantics of Parallel\_Iterators
- AI12-0355-2/01 Aspect specifications for parallel constructs
- AI12-0362-2/01 Attributes for fixed point types
- AI12-0363-1/04 Fixes for Atomic and Volatile
- AI12-0372-1/02 Static accessibility of "master of the call"
- AI12-0374-2/02 Fixes for Nonblocking
- AI12-0377-1/02 View conversions and out parameters of types with Default\_Value revisited
- AI12-0378-1/06 View conversions and out parameters of access types revisited
- AI12-0379-1/02 More presentation issues
- AI12-0380-1/04 Fixups for Global annotations
- AI12-0381-1/02 Tag of a delta aggregate
- AI12-0382-1/01 Loosen type-invariant overriding requirements of AI12-0042-1
- AI12-0383-1/01 Renaming values
- AI12-0384-2/01 Fixups for Put\_Image and Text\_Buffers
- AI12-0385-1/01 Predefined shifts should be static
- AI12-0386-1/01 Still more presentation issues
- AI12-0388-1/02 Still more presentation issues
- AI12-0389-1/01 Ignoring unrecognized aspects
- AI12-0390-1/02 Conversions of anonymous access function results
- AI12-0391-1/01 List containers need Append\_One
- AI12-0392-1/01 Conditional expressions containing raise expressions

AI12-0393-1/01 No invalid static constants  
AI12-0394-1/01 Named Numbers and User-Defined Numeric Literals  
AI12-0395-1/01 Allow aspect\_specifications on formal parameters  
AI12-0396-1/01 Fixups for various aspects of aspects  
AI12-0397-1/01 Default\_Initial\_Condition applied to derived type  
AI12-0398-1/02 Most declarations should have aspect specifications  
AI12-0399-1/01 Aspect specification for Preelaborable\_Initialization  
AI12-0400-1/02 Ambiguities associated with Vector Append and container aggregates  
AI12-0401-1/01 Renaming of qualified expression of variable  
AI12-0403-1/02 Presentation issues from Draft 26 review

As usual, the list of all AIs that have been approved by the ARG but not by WG 9 can be found at [ada-auth.org/ai-files/ARG\\_AI12.zip](http://ada-auth.org/ai-files/ARG_AI12.zip) . Links to draft Ada 202X versions of both the Ada RM and the annotated Ada RM can be found at <http://www.ada-auth.org/standards/ada2x.html> ; these RM versions reflect ARG-approved changes. For getting familiar with the changes of Ada 202x, the annotated version is recommended.

ARG members also participated in a review of the entire RM, with each section of the RM being assigned to an ARG member for detailed review.

These AIs are not being delivered to WG 9 for individual review. Instead, the ARG plans to deliver to WG 9 a complete, new version of the language standard which incorporates all ARG-approved changes. This delivery is planned to occur by the end of March, although delays are possible. The ARG has not been delivering individual AIs to WG 9 for some time now, as per the policy discussed at the WG 9 meeting of June 2019; it would not make sense to resume dealing with individual AIs so close to the end of the Ada 202X revision process. A corrigendum requires linkage between changes and "Defect Reports" (which generally correspond to individual AIs) but Ada 202X is a revision and not a corrigendum; there are no plans to generate "Defect Reports" for Ada 202X.

At some point, the ARG will need direction from WG 9 regarding how to proceed with post-202X work; for now, however, it seems premature to focus on anything other than Ada 202X.

### **Rapporteur Report HRG**

Nothing to report.

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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-78-1:** The ARG will propose meeting dates to WG 9 consistent with receiving the standard and completing the WG 9 review process. [Steve Baird]

Status: Closed (meeting #79 is the completion).

**AI-78-2:** Pat to contact AdaCore yet again re: SPARK Part of TR 24772.

Status: Closed. The project is now underway, being revised/updated by Rod Chapman.

**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 in order to produce standards-related documents; adoption of SPARK and its environments into the WG9 scope.

Status: Open

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## **Committee as a Whole**

We must ensure there are no technical changes requested when SC 22 votes, otherwise the procedural shortcuts will not be available. In that case the process could take the full 18 months.

Therefore, we will have a publicly observable “spreadsheet” containing an entry for each comment received during the WG 9 review. These entries will contain, among other things, the resolution status.

The spreadsheet will be open to the public for viewing. (Yes.)

Past experience indicates that we need to allow four to six weeks for comments to be resolved.

WG 9 can submit a request to SC 22 to open the 18-month revision project in August at the Plenary, for a vote during the Plenary, or we can request they do so before the Plenary via a letter ballot. We should plan accordingly, such that a request prior to the August Plenary is possible.

If all goes well, we can assume that the ‘X’ of Ada 202X will be a ‘2,’ which fits in the usual 10-year revision interval.

Questions: are there suggestions for the venue for comments and discussion, and the spreadsheet, facilitating both tracking and visibility? Something like a GitHub project... Google doc? ISO Bit Bucket is available, similar to GitHub?

We should have a list of volunteers to review specific topics/sections of the revision, perhaps based on the article by Jeff et al in AUJ. In particular not to have to review the entire doc. Presumably not an ARG member since they are already reviewing.

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## **Unfinished Business**

[AGENDA](#)

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## **New Business**

[AGENDA](#)

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## **Scheduling of Future Meetings**

Virtual meetings, 19 April and June (after Ada-Europe on Friday) same time if virtual.

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## Review of New Action Items

**AI-79-1:** Pat to set up the comment forum, perhaps Bitlocker.

**AI-79-2:** Pat to send an email to WG 9 requesting reviewer volunteers. Randy, Steve, Pat, and Tucker will formulate a plan, with reviewer input.

**AI-79-3:** Pat to get copyright form from the SC 22 Committee Manager and coordinate on ensuring issue is resolved.

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## Final Consideration of Resolutions

**Resolution 79-1:** The meeting minutes of meeting #78 are approved.

**Resolution 79-2:** The next two meetings of WG 9 will be held Monday, 19 April 2021, and Friday, 12 June 2021. These are both tentatively set to be virtual and will begin at 16:00 UTC. If the June meeting is not virtual it will be held after Ada Europe in Santander, Spain and will begin at 9:00am local time.

**Resolution 79-3:** The Ada Part of 24772 should be approved by WG 9.

**Resolution 79-4:** WG 9 can forward messages from WG 23 to its members re: the Ada Part.

**Resolution 79-5:** WG 9 will vote on the submission of the Ada Part of the WG 23 document.

**Resolution 79-6:** WG 9 wishes to remind members that NWIPs for language Parts will be created and request WG 9 participation.

**Resolution 79-7:** Tucker Taft will be made an Editor for ISO 18009.

**Resolution 79-8:**

ISO/IEC JTC 1/SC 22/WG 9 continues its Annex H 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.

**Resolution 79-9:**

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, Arnaud Charlet, Jeff Cousins, Gary Dismukes, Claire Dross, Robert Duff, Edward Fish, Pascal Leroy, Brad Moore, 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.

**Resolution 79-10:**

ISO/IEC JTC 1/SC 22/WG 9 expresses its grateful appreciation to Alok for acting as secretary for Meeting #79.

**Resolution 79-11:** ISO/IEC JTC 1/SC 22/WG 9 expresses its grateful appreciation to Clyde Roby for maintaining the document list page.

**Resolution 79-12:** ISO/IEC JTC 1/SC 22/WG 9 expresses its grateful appreciation to the Convenor, Pat Rogers.

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**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.