

ISO/IEC JTC1/SC22/WG9 N389

Revised 8 June 2001, Jim Moore, Convener (incorporating corrections suggested by John Barnes and Randy Brukardt)

These minutes will be considered for approval at the meeting of 5 October 2001.

Minutes

Meeting #40 of ISO/IEC JTC1/SC22/WG9

Friday, 18 May 2001

Leuven, Belgium

The 40th meeting of [ISO/IEC JTC1/SC22/WG9](#) was hosted by the [Ada-Europe conference](#) in cooperation with the National Body of Belgium.

The announcement and preliminary agenda for this meeting were circulated as [N386](#). The detailed agenda was [N387](#).

Agenda

- ? [Opening Orders](#), Jim Moore, Convener
 - ? [Call to Order](#)
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- ? [Convener's Report](#)
- ? [Scheduling of Meetings #41 and #42](#)
- ? [Review of Action Items and Unimplemented Resolutions](#)
- ? [Project Editor Reports](#) (as needed):
 - ? ISO/IEC 8652, Randy Brukardt and Erhard Ploedereder (will be treated under "[Report of Ada Rapporteur Group](#)")
 - ? [ISO/IEC TR 11735](#), Nasser Kettani
 - ? [ISO/IEC 12227](#), Andreas Koeller

- ? [ISO/IEC 13813 and 13814](#), Don Sando, Jon Squire and Ken Dritz
- ? ISO/IEC 15291, Clyde Roby and Steven Blake (will be treated under "[Report of ASIS Rapporteur Group](#)")
- ? ISO/IEC TR 15942, Brian Wichmann (will be treated under "[Report of Annex H Rapporteur Group](#)")
- ? ISO/IEC 18009, Erhard Ploedereder (will be treated under "[Report of Ada Rapporteur Group](#)")
- ? [Report of Ada Rapporteur Group](#), Erhard Ploedereder (chair)
 - ? [ISO/IEC 8652:1995, Programming Languages -- Ada](#)
 - ? [ISO/IEC 8652:1995/COR.1:2000, Technical Corrigendum](#), Randy Brukardt
 - ? [ISO/IEC 18009:1999, Ada Conformity Assessment](#)
- ? [Report of ASIS Rapporteur Group](#), Currie Colket (chair)
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Appendix

- ? [Charter of the HRG](#)

References

Detailed Agenda Items

Opening Orders, Jim Moore, Convener

Call to Order

The meeting began at 9:15 am.

Appointment of Meeting Secretary

The convener served as secretary.

Approval of Agenda

The agenda was approved as distributed.

Approval of Minutes of Meeting #39

Information:

The minutes of Meeting #39 appear in document [N385](#). The document includes several corrections provided subsequent to Meeting #39:

- ? (Tokar) Correctly noting the date of the conclusion of the SC22 ballot on the Technical Corrigendum.
- ? (Brukardt, Roby) Correcting an editing error that introduced an extraneous section regarding TR 15942.
- ? (Barnes) Correcting the HTML header of the document.

Resolutions:

[\[Resolution 40-1\]](#)

[\[Agenda\]](#)

National Body Reports and Introductions

Attendees:

National Body Representatives:

- ? Canada: Steve Michell
- ? Germany: Erhard Ploedereder [\[Report\]](#)
- ? Japan: Kiyoshi Ishihata
- ? Switzerland: Alfred Strohmeier
- ? UK: John Barnes, Brian Dobbing [\[Report\]](#)

? US: Joyce Tokar, Currie Colket, Ben Brosgol, Randy Brukaradt, Tucker Taft

WG9 Officers:

? James W. Moore, Convener

? Erhard Ploedereder, Chair of ARG (also listed in German delegation)

? Currie Colket, Chair of ASIS RG (also listed in US delegation)

? Alan Burns, Chair of HRG

Other Attendees: Pascal Leroy (member of ARG)

Reports:

Report by the German delegation:

The Ada-Germany conference took place March 27-28 in Munich, with lively participation.

Report by the UK delegation:

The BSI Ada Panel had a meeting in early April at which it discussed a number of the proposed amendment AIs and future directions of the HRG. The general feeling was one of approval.

[\[Agenda\]](#)

Convener's Report

WG9 Web Page

Clyde Roby continues his fine work in maintaining [WG9's web page](#).

[\[Resolution 40-10\]](#)

Plenary Meeting of SC22

The plenary meeting of SC22 will occur 17-21 September 2001 in Kona, Hawaii. At appropriate points in today's agenda, we will consider material to be presented at the SC22 meeting.

Possible Restructuring of JTC1

Discussions continue within JTC1 regarding restructuring with the goal of achieving greater market relevance. There appear to be three related proposals on the table:

- ? Compressing the structure of JTC1 to only two levels: a *technical* level that would develop documents and ballot them through FCD; a *management* level that would conduct FDIS ballots for final approval of standards.
- ? Opening the technical level to participation by parties other than National Bodies.

- ? Charging a participation fee for non-NB participants in order to defray the expense of operating secretariats.

Discussions continue within JTC1 itself and within subgroups of JTC1. The likely outcome is not obvious.

Technical Corrigendum to Ada Standard

The Technical Corrigendum to the Ada Reference Manual was approved by SC22 on 26 February 2001 and sent to ITTF for publication. The Chair congratulates the project editors, Randy Brukardt and Erhard Ploedereder and the members of the ARG for this important accomplishment.

[\[Resolution 40-11\]](#)

Chair of SC22

The current chair of SC22 is John Hill from the United States. Bob Mathis, former convener of WG9, briefly served as the US Head of Delegation to SC22. The position is now filled by Rex Jaeschke.

Republication Rights to Technical Reports

At the last meeting of WG9, the Convener was given the following action item:

Action Item 39-6 (Convener): Ask Central Secretariat if they routinely grant permission for TRs to be reprinted. Otherwise we will have to find some way to make the Ravenscar TR widely available in the Ada community.

I have corresponded via email with M. Jacques-Olivier Chabot of ISO Central Secretariat on this issue. As a result of this interchange, I have learned the following:

- ? It is possible to request that a Technical Report be made "publicly available" on the [ITTF Web Site](#). This allows the document to be viewed, but does not confer any rights for the document to be copied or republished.
- ? In order to republish all or part of a standard or technical report, the publisher must enter into an "exploitation of rights" agreement with ISO or with the publisher's national body.
- ? ISO routinely enters into "exploitation of rights" agreements. The terms of the agreement require the payment of a royalty. The royalty amounts to 10% of the price of a standard with a number of pages equivalent to those copied in the publication. For example, suppose that a Technical Report is 35 pages long and a publisher reprints the equivalent of 7 pages. Then the publisher owes a royalty equivalent to 10% of the cost of a 7-page standard. So, what is the price of a 7-page standard? That can be determined by consulting the [ISO Table of Price Codes](#) -- a 7-page standard is priced at CHF 50, so the royalty payment would be CHF 5 per reprinted copy.
- ? The process for entering into the agreement is straightforward. In response to receipt of payment, ISO Central Secretariat sends a letter to the publisher granting permission to

reprint the material in the given number of copies.

- ? A publisher can choose to enter an agreement with its own National Body rather than with ISO Central Secretariat. Some NBs, e.g. ANSI, may be more flexible in their terms.

Term of the Convener

The convener of WG9 has been reappointed to another three-year term that will expire at the SC22 plenary meeting in September 2003.

[\[Agenda\]](#)

Scheduling of Meetings #41 and #42

Information:

The schedule for meetings #41 and #42 is proposed as follows:

- ? Meeting #41, 5 October 2001, Minneapolis, Minnesota in conjunction with the SIGAda conference
- ? Meeting #42, 21 June 2002, Vienna, Austria, in conjunction with the Ada-Europe conference

Discussion:

There was discussion of our custom of scheduling our meetings in conjunction with the SIGAda and Ada-Europe conferences. Tokar asks if it might be better to associate our meeting with non-Ada conferences in order to better reach out to other communities. Michell replies that the SIGAda and Ada-Europe conferences value our collocation with them because we attract some participants who might not attend otherwise. It was stated that the current arrangement minimizes travel expenses for WG9 participants. Tokar replied that associating with other conferences would provide us with more knowledge of other areas and greater exposure to those communities. Strohmeier said that we would need an overall strategy to make a change like this. Barnes remarked that we have some experience due to Ada-Europe's past association with the Eurospace conference. Ploedereder said that it would be helpful to have people knowledgeable about Ada at other conferences. For now, we decide to continue our current practice in scheduling meetings but to reconsider the issue at the next meeting of WG9.

[\[Resolution 40-3\]](#)

[\[Agenda\]](#)

Review of Action Items and Unimplemented Resolutions

Information:

This is the "To Do" list for WG9. Some are informal action items assigned to various

participants. Some are formal resolutions, which are not yet implemented. Some are suspense items awaiting action by other groups.

Open Action Items

Action Item 39-1

(Convener): Send a letter to Ada-Sweden inviting a representative from Sweden's National Body.

Status: CLOSED. The convener corresponded with Örjan Leringe in Sweden and Shayne Flint in Australia. The likelihood of representation from either nation seems low.

Action Item 39-2

(Convener): Contact Prof. Alfred Strohmeier to determine if Springer-Verlag can publish the ARM.

Status: OPEN. Discussions with Springer-Verlag are underway.

Discussion:

Strohmeier: Springer has agreed to publish the ARM as part of the lecture notes series. It will be published in November. Ada-Europe will probably distribute copies its members. (This action item is now closed.)

[See [Report of ARG: COR.1](#)]

Action Item 39-3

(ARG Chair): Draft a New Work Item Proposal for an Amendment to the Ada standard with a planned completion date of 2005.

Status: CLOSED. The Project Editor has drafted an NP for consideration at the meeting Leuven meeting of WG9.

[See [Report of ARG](#)]

Action Item 39-4

(Convener): Prepare a "standing rule" that RGs develop new language features and APIs but the ARG determines how to package them, i.e. as part of the core standard, secondary standards, amendments, annexes etc., and determines how to express the optionality desirable in the features. ARG would act as a gatekeeper for language proposals that are submitted. WG9 would create new RGs as appropriate and would work in coordination with technical groups or professional societies.

Status: CLOSED. Convener has drafted a revised Charter for the ARG implementing the requirements noted in the action item. The revised Charter will be submitted for approval at the Leuven meeting of WG9.

[See [Report of ARG](#)]

Action Item 39-5

(HRG Chair): Draft a New Work Item Proposal for the Technical Report providing guidelines and rationale for the use of the Ravenscar profile.

Status: OPEN.

Action Item 39-6

(Convener): Ask Central Secretariat if they routinely grant permission for TRs to be reprinted. Otherwise we will have to find some way to make the Ravenscar TR widely available in the Ada community.

Status: CLOSED. See [Convener's Report](#) for description of Convener's conclusions.

Action Item 39-7

(Convener): Send the HRG Charter to the HRG Chair for consideration of extension of scope.

*Status: CLOSED. Convener sent Charter to HRG Chair. In the convener's opinion, there is no need for extension of scope. **The HRG agrees.***

Unimplemented Resolutions

Resolution 36-3:

ISO/IEC JTC1/SC22/WG9 recommends to SC22 that the following standard be withdrawn when it reaches the end of its five-year life. The standard is relevant to the 1987 version of the Ada language standard rather than the current version:

- ? ISO/IEC 12227:1995 SQL/Ada Module Description Language (SAMeDL), Project JTC1.22.31

Status: OPEN. This resolution has been reported to SC22 and endorsed (Resolution 99-19) at their plenary meeting in September 1999. JTC1 voted in March 2001 to approve withdrawal. Routine processing by ITTF should result in withdrawing the standards before the end of 2001.

Resolution 38-4:

ISO/IEC JTC1/SC22/WG9 recommends to SC22 that the following Technical Report be withdrawn when it reaches the end of its five-year review period. The Technical Report is relevant to the 1987 version of the Ada language standard rather than the current version:

- ? ISO/IEC TR 11735:1996, EXTensions for real-time Ada

Status: OPEN. This resolution has been reported to SC22 and endorsed (Resolution 00-22) at their plenary meeting in September 2000. JTC1 will ballot the withdrawal in early 2002. Implementation of the resolution can be expected before the end of 2002.

[\[Agenda\]](#)

Project Editor Reports

[\[Agenda\]](#)

Project Editor Report, ISO/IEC TR 11735

Information:

From Convener's Report, 1 July 1998, [N345](#):

Project 22.35 -- (Type 2) TR 11735:1996 EXTensions for real-time Ada, Nasser Kettani, Editor
The contents of 11735 are substantively subsumed by the 1995 revision of 8652. This Technical Report will be withdrawn when usage of the 1987 version of the Ada language has diminished.

From SC22 N3178, Resolutions Prepared at the Thirteenth Plenary Meeting of ISO/IEC JTC 1/SC22 Nara, Japan, 2000-09-12/15:

Resolution 00-22: Standards for Periodic Review

ISO/IEC JTC 1/SC22 recommends to ISO/IEC JTC 1 that ... the following technical report be withdrawn at the end of its 5 year review period: ... ISO/IEC TR 11735:1996 - Extensions for real-time Ada.

[\[Agenda\]](#)

Project Editor Report, ISO/IEC 12227

Information:

Project 22.31 -- IS 12227:1995 SQL/Ada Module Description Language (SAMeDL), Andreas Koeller, editor.

Resolution 36-3, [N363](#):

ISO/IEC JTC1/SC22/WG9 recommends to SC22 that the following standard be withdrawn when it reaches the end of its five-year life. The standard is relevant to the 1987 version of the Ada language standard rather than the current version:

- ? ISO/IEC 12227:1995 SQL/Ada Module Description Language (SAMeDL), Project JTC1.22.31

Resolution 99-19, SC22 N3013:

ISO/IEC JTC1/SC22 recommends that the following standard be withdrawn:

- ? ISO/IEC 12227:1995 - SQL/Ada Module Description Language

[\[Agenda\]](#)

Project Editor Report, ISO/IEC 13813 and 13814

Information:

Project 22.10.04 -- IS 13813:1998 Generic packages of real and complex type declarations and basic operations for Ada (including vector and matrix types), Don Sando and Ken Dritz, editors

Project 22.10.05 -- IS 13814:1998 Generic package of complex elementary functions for Ada, Jon Squire and Ken Dritz, editors

From Convener, email, 15 March 2001

As you know, every standard is reviewed at five years of age to determine if it should be confirmed (kept as is), revised, or withdrawn. This year we begin the five-year review of the following WG9 standards:

- ? ISO/IEC 13813:1998 Information technology -- Programming languages -- Generic packages of real and complex type declarations and basic operations for Ada (including vector and matrix types)
- ? ISO/IEC 13814:1998 Information technology -- Programming languages -- Generic package of complex elementary functions for Ada

I suspect that your first response is that these are not five years old. You're right, but the process begins this year with the following timetable:

- ? May 2001: WG9 submits its recommendation to SC22
- ? Sep 2001: SC22 submits its recommendation to JTC1

(At this point, it is worth noting that fortuitous scheduling of meetings results in an SC22 recommendation to JTC1 being available for JTC1's autumn 2001 meeting. This is not the case for most of the SC's. Hence, the following)

- ? ca. Nov 2002: JTC1 accepts recommendations from the SCs and develops a list for ballot
- ? ca. Mar 2003: JTC1 ballots the recommendations

Therefore, it is clear that we must develop our recommendations for the future of these two standards at our forthcoming meeting. Please be prepared to offer a position on the future of these two standards.

Report:

From Ken Dritz, email, 18 April 2001

13813 and 13814 are, of course, for Ada 83. I dug drafts of them, eight years old, out of my files; I don't think I ever saw the finished standards. I shall presume that my drafts reflect what was in the final standards.

13813 defines a generic complex types package, an array exceptions package, a generic real arrays package, and a generic complex arrays package. Of these, only the first is contained in

Ada 95. As I recall, the reason for that was that we didn't want to standardize array subprograms "prematurely"; we wanted to wait until such future time as syntax and semantics for generalized array "sections" (multidimensional slices) could be defined in the core language. The generic complex types package in Ada 95 is functionally comparable to the one in 13813, but not identical.

13814 defines a generic complex elementary functions package. The generic complex elementary functions package in Ada 95 is functionally comparable to the one in 13814, but not identical. The biggest difference is that the latter separately imports a long list of complex operations as generic formal subprograms with box defaults (normally expected to be defined by an instantiation of the generic complex types packages at the place where the generic complex elementary functions package is instantiated), whereas the former imports just an instantiation of the generic complex types package.

Given that 13813 provides considerably more functionality than does the only part of it that was incorporated into Ada 95, it might be reasonable to reaffirm that standard. However, I believe there is a technical problem in doing so. The generic complex types package defined in 13813 renames an exception defined by the generic elementary functions package in 11430, which has been withdrawn. The generic complex elementary functions package also renames that exception.

I hope this proves to be useful. Say hello to all my old friends in WG9.

Discussion:

At the suggestion of Barnes, we separate the discussion of the two standards. There is consensus that 13814 should be withdrawn. Discussion continues on the future of 13813. Michell asks if WG9 currently has the expertise needed to revise 13813 because the needed changes might not be simple. Tokar suggests that we might leave the standard in place for now and ask the ARG to include the functionality in the planned amendment to 8652. No one knows of any vendor implementations of the standard but Barnes says that implementation by users is straightforward.

We break for coffee. Following the break, the convener suggests the following plan:

- ? For now, withdraw 13814 and reaffirm 13813.
- ? Ask UK to study whether small or large changes are needed in 13813.
- ? Send UK recommendation to ARG.
- ? Ask ARG for recommendation of packaging of changes. (The range of possibilities to be considered should include publication as part of a textbook.)

There is general agreement with this approach.

Action Item 40-1 (Convener): Send electronic copy of 13813 to John Barnes.

Action Item 40-2 (UK): Make a recommendation regarding the changes necessary for 13813.

Action Item 40-3 (ARG Chair): Upon receipt of the UK recommendation, consider the

packaging appropriate for the functionality of the current 13813.

Resolution:

[\[Resolution 40-6\]](#) [\[Agenda\]](#)

Report of Ada Rapporteur Group, Erhard Ploedereder (chair)

Information:

From WG9 [N385](#), Minutes of November 2000 Meeting

The ARG is planning to begin discussions about future modifications of the Ada standard as either Technical Corrigenda, Amendments, or Revision. There was some discussion at this WG9 meeting about which method to use; the discussion centered around Amendments as the way to move forward. This will be the primary work of the ARG over the next few years.

WG9 must draft a New Work Item Proposal (NP) to go forward with an Amendment by 2005. ...

Action Item 39-3 (ARG Chair): Draft a New Work Item Proposal for an Amendment to the Ada standard with a planned completion date of 2005. [See [Resolution 40-7](#).]

AIs will be written up similar to inputs to a Defect Report. A significant group of AIs could be grouped together to develop the appropriate document. Most compilers support or will support most of the changes suggested to the Ada language; thus, the ARG basically "approves" these changes. ...

There was discussion that Rapporteur Groups can develop new language features which are then input to the ARG (as gatekeeper of language proposals and new proposals of secondary standards) by technical groups or professional societies to determine how to package them (standard features, annexes, etc.) and how to express the optionality desired of these features. This will be a resolution at a future meeting.

Action Item 39-4 (Convener): Prepare a "standing rule" that RGs develop new language features and APIs but the ARG determines how to package them, i.e. as part of the core standard, secondary standards, amendments, annexes etc., and determines how to express the optionality desirable in the features. ARG would act as a gatekeeper for language proposals that are submitted. WG9 would create new RGs as appropriate and would work in coordination with technical groups or professional societies.

From Convener, email, 22 March 2001

After performing a bit of research, I have determined that a good way to capture this decision as a "standing rule" is to put it into the charter of the ARG. For the baseline charter, I used the statement of purpose that can be found in the current ARG Procedures. I then edited it to look a bit more like the other charters for WG9 Rapporteur Groups and to capture the ideas expressed in the Action Item.

I plan to offer this proposed Charter for approval at the Leuven meeting. [See [Resolution 40-4.](#)] As is usual, I hope to surface any issues prior to the meeting. Therefore, I request that you respond at the earliest possible opportunity if you wish to suggest changes.

From Convener, email, 12 April 2001

I have received no comments on the attached item. Therefore, I regard the issue as settled, aside from the formalities. The proposed charter for the ARG will be tabled at the Leuven meeting for approval by WG9. [See [Resolution 40-4.](#)]

General Report of ARG:

The ARG met in Columbia, Maryland, USA, 17-19 November 2000, immediately following the WG9 meeting, for its usual three-day meeting. A number of amendment proposals were examined, some of which are getting close to general agreement. Notably, one of the amendments is the inclusion of the Ravenscar profile.

As a general guideline for amendments, the ARG agreed on the following points of emphasis:

- ? safety, to continue and extend on Ada's strong suite
- ? portability, with emphasis on APIs to existing capabilities (where help of the community and of other working groups is solicited)
- ? interoperability with other languages and systems
- ? accessibility and ease of transition from idioms in other programming and modelling languages, such as UML to Ada

The next meeting follows the WG9 meeting in Leuven.

Discussion:

Ploedereder announced that he intends to retire from the chairmanship of the ARG. At the ARG meeting, he will ask the ARG to nominate a successor. Erhard will continue to serve as chair (in the formal sense) until a new chair is confirmed by WG9.

Resolutions:

Revised Charter of Ada Rapporteur Group [[Resolution 40-4](#)]

New Work Item Proposal for Amendment to Ada Language [[Resolution 40-7](#)]

[[Agenda](#)]

ISO/IEC 8652:1995, Erhard Ploedereder

Information:

ISO/IEC 8652:1995 Information Technology--Programming Languages--Ada
Project 22.10.01, Randy Brukardt and Erhard Ploedereder, Project Editors

[[Agenda](#)]

ISO/IEC 8652:1995/COR.1:2000, Technical Corrigendum, Randy Brukardt

Information:

Resolution 38-5, [N372](#):

Having examined the draft of the planned United States National Body (USNB) contribution for 8652:1995/CORR, WG9 determines that the substantive content of the draft is a satisfactory basis for the text of the CORR. WG9 requests that the USNB resolve remaining editorial issues and effect contribution of the draft Corrigendum and supporting documents by 1 August 2000. The Convener is directed to commence a 30-day email ballot for approval of the CORR immediately upon receipt of the contribution from the USNB. Upon approval by WG9, the convener is directed to submit the CORR for approval by ISO/IEC JTC1/SC22.

Resolution 38-6, [N372](#):

WG9 requests that the USNB contribute the text of 8652:1995/CORR (both the Corrigendum itself and the modified standard) in the form, at least, of HTML, PDF, and RTF files. Noting that the so-called "AARM" is not a formal standard, WG9 nevertheless requests that a new AARM be contributed in the same formats, accompanied by an appropriate disclaimer regarding its status.

From Convener:

WG9 approved the Technical Corrigendum and its supporting documents ([N374](#), [N375](#), [N376](#), [N377](#)) by an email ballot that concluded September 2. There were no Negative votes and no comments. Following editorial preparation, the Technical Corrigendum and its supporting documents ([N379](#), [N380](#), [N381](#), [N382](#)) have been submitted for approval by SC22. Approval is expected by the end of the year.

From SC22 Secretariat, SC 22 N 3185

Draft Technical Corrigendum Text and Letter Ballot for Draft Technical Corrigendum 1 for ISO/IEC 8652: 1995, Programming Language - Ada, 6 November 2000

From SC22 Secretariat, SC 22 N 3214

Summary of Voting on SC22 N 3185, DCOR 1 to ISO/IEC 8652:1995, Programming Languages - Ada

The following responses have been received on the subject of approval:

"P" Members supporting approval without comment 12 (Belgium, Canada, China, Denmark, Germany, Ireland, Japan, Netherlands, Norway, Russian Federation, UK, USA)

"P" Members supporting approval with comments 0

"P" Members not supporting approval 0

"P" Members abstaining 1 (France)

"P" Members not voting 8 (Austria, Brazil, Czech Republic, Egypt, Finland, Romania, Slovenia, Ukraine)

From SC22 Secretariat, Email to Keith Brannon (ITTF), 26 February 2001:

Please find attached the following document for publication:

SC 22 N 3185, DCOR 1 to ISO/IEC 8652:1995, Programming Languages - Ada

The summary of voting was circulated as SC 22 N 3214. I will forward to you the e-mail message that contains this document. There were no ballot comments on the DCOR text.

From WG9 [N385](#), Minutes of November 2000 Meeting

Action Item 39-2 (Convener): Contact Prof. Alfred Strohmeier to determine if Springer-Verlaag can publish the ARM.

From Convener's Email of 27 March 2001

The current idea is that the document should have the title:

Consolidated Ada Reference Manual
Language and Standard Libraries
ISO/IEC 8652:1995(E) with Technical Corrigendum 1

and that the editors should be listed as:

S. Tucker Taft
Robert A. Duff
Randall L. Brukardt
Erhard Ploedereder

(The logic of the order of names is that the new edition would collate near the old edition in bibliographic databases.)

The document would NOT have change bars. As Alfred wrote, "After a year or so, nobody will be any longer interested in "changes", but the book will be still around, and the feeling will remain that there were RECENT changes in the language."

The size of the pages remains undecided. Randy and I prefer retaining the size of the currently available draft. Changing it would require reproofing all of the examples to ensure that lines have not wrapped inappropriately. We don't yet know if Springer-Verlag will agree.

Discussion:

(As mentioned in the discussion of Action Items, Springer has agreed to publish the ARM.)

[\[Resolution 40-5\]](#)

ISO/IEC 18009:1999, Ada Conformity Assessment, Erhard Ploedereder

Information:

ISO/IEC 18009:1999, Information Technology -- Programming Languages -- Ada: Conformity Assessment of a Language Processor

Project 22.18009, Erhard Ploedereder, Project Editor

[\[Agenda\]](#)

Report of ASIS Rapporteur Group, Currie Colket (chair)

ISO/IEC 15291:1999, Information Technology--Programming Languages--Ada Semantic Interface Specification (ASIS)

Information:

ISO/IEC 15291:1999, Information Technology--Programming Languages--Ada Semantic Interface Specification (ASIS)

Project 22.15291, Clyde Roby and Steve Blake, editors

From WG9 [N385](#), Minutes of November 2000 Meeting

A few more implementations of ASIS are now available. It was recommended that a list of all test suites for ASIS be provided, perhaps available on the ASISWG website. ...

A few "bugs" have been uncovered, notably in one of the packages that had not been implemented when ASIS was standardized. This means that there probably will be a Corrigendum produced sometime in the future.

Report:

A recent workshop considered extensions and changes to the ASIS standard. A report will be published in Ada Letters. A paper at this conference discussed OASIS, an object-oriented application of ASIS.

The ASIS RG is considering mechanisms for updating ASIS standard.

[\[Agenda\]](#)

Report of Annex H Rapporteur Group, Alan Burns (chair)

ISO/IEC TR 15942:2000, Guidance for the use of the Ada Programming Language in High Integrity Systems

Information:

ISO/IEC TR 15942:2000, Guidance for the use of the Ada Programming Language in High Integrity Systems

Project 22.15942 Brian Wichmann, Editor

From WG9 [N385](#), Minutes of November 2000 Meeting

An AI describing Ravenscar will be sent to the ARG. HRG will produce guidelines and rationale on the use of Ravenscar in the form of a Technical Report.

Action Item 39-5 (HRG Chair): Draft a New Work Item Proposal for the Technical Report providing guidelines and rationale for the use of the Ravenscar profile.

Action Item 39-6 (Convener): Ask Central Secretariat if they routinely grant permission for TRs to be reprinted. Otherwise we will have to find some way to make the Ravenscar TR widely available in the Ada community.

Action Item 39-7 (Convener): Send the HRG Charter to the HRG Chair for consideration of extension of scope.

For convenience, the current [Charter of the HRG](#) appears in the [Appendix](#) to this document.

Report:

The recent meeting of the HRG confirmed that they wish to move ahead on drafting a Technical Report providing advice on the usage of the Ravenscar profile. They developed a list of contents and assigned an author to each section. They plan to develop a first draft within six months. They plan to bring an NP to the WG9 meeting following completion of the initial draft.

The HRG also discussed the continuing role of Annex H of ISO/IEC 8652. They discussed the desirability of changing its title to High-Integrity rather than Safety and Security. The HRG might recommend that the fourth section of Annex H should be reworked to better fit with the recently completed TR 15942. They also considered tracking the usage of relevant pragmas implemented by various vendors.

It is understood that the HRG may work with the University of York or other institutions in obtaining material that might be incorporated into a Technical Report.

The next meeting of the HRG will be collocated with the SIGAda conference.

Resolution:

[\[Resolution 40-8\]](#)

[\[Agenda\]](#)

Liaison Reports

There was none.

[\[Agenda\]](#)

Unfinished Business

There was none.

[\[Agenda\]](#)

New Business

There was none.

[\[Agenda\]](#)

Administrative Actions

Action:

We appreciate the comfortable accommodations provided by Ada-Europe and the National Body of Belgium. The following resolution expresses WG9's gratitude.

Resolution:

[\[Resolution 40-9\]](#)

Action:

According to the JTC1 Directives, Rapporteur Groups serve from meeting to meeting of the parent body. The following resolution continues the existing RGs and appoints their Chairs until the next meeting of WG9.

Resolution:

[\[Resolution 40-2\]](#)

[\[Agenda\]](#)

Review of New Action Items

Action Item 40-1 (Convener): Send electronic copy of 13813 to John Barnes.

Action Item 40-2 (UK): Make a recommendation regarding the changes necessary for 13813.

Action Item 40-3 (ARG Chair): Upon receipt of the UK recommendation, consider the packaging appropriate for the functionality of the current 13813.

Final Consideration of Resolutions

(The resolutions are not numbered sequentially.)

All resolutions were approved unanimously.

Administration

Resolution 40-1:

The minutes of Meeting #39 as contained in document [N385](#) are approved.

[\[Discussion\]](#) [\[Agenda\]](#)

Resolution 40-2:

ISO/IEC JTC1/SC22/WG9 continues the following Rapporteur Groups until the next plenary meeting and expresses its grateful appreciation to their chairs for their service:

- ? Ada Rapporteur Group, Erhard Ploedereder
- ? ASIS Rapporteur Group, Currie Colket
- ? Annex H Rapporteur Group, Alan Burns

[\[Discussion\]](#) [\[Agenda\]](#)

Resolution 40-3:

WG9 schedules its next meetings as follows:

- ? Meeting #41, 5 October 2001, Minneapolis, Minnesota in conjunction with the SIGAda conference
- ? Meeting #42, 21 June 2002, Vienna, Austria in conjunction with the Ada-Europe conference

[\[Discussion\]](#) [\[Agenda\]](#)

Resolution 40-4:

WG9 adopts the following revision to the charter of its Ada Rapporteur Group, with the understanding that the ARG may request changes to be considered at the next meeting of WG9:

Charter of the Ada Rapporteur Group

The Ada Rapporteur Group (ARG) is a subgroup of ISO/IEC JTC1/SC22/WG9, the JTC1 Working Group for Ada. The ARG has the following duties:

- ? *Serve as an advisory group for the project editors of ISO/IEC 8652 and ISO/IEC 18009.*
- ? *Support the SC22 defect and interpretation process by drafting publicly available responses to Defect Reports on ISO/IEC 8652 and ISO/IEC 18009.*
- ? *Draft text for proposed clarifications, corrections and changes to those two standards and others as assigned by WG9.*
- ? *Recommend strategies for extensions of the Ada language and libraries and prescription of conformity and optionality via the use of corrigenda, amendments, secondary*

standards, technical reports and informative materials.

- ? *Coordinate with other organizations to promote uniform implementation of the Ada standard and appropriate usage of Ada in other standards.*

Language proposals originating in other Rapporteur Groups of WG9 will be referred to the ARG for disposition in the same manner as suggestions originating outside of WG9.

[\[Discussion\]](#) [\[Agenda\]](#)

Resolution 40-5

ISO/IEC JTC1/SC22/WG9 requests that the US delegation make a request to The MITRE Corporation to provide the text of the ARM in a form suitable for paper publication by Springer-Verlag.

[\[Discussion\]](#) [\[Agenda\]](#)

Work Programme

Resolution 40-6

ISO/IEC JTC1/SC22/WG9 recommends to SC22 that the following Standard be confirmed when it reaches the end of its five-year review period:

- ? ISO/IEC 13813:1998 Generic packages of real and complex type declarations and basic operations for Ada (including vector and matrix types)

ISO/IEC JTC1/SC22/WG9 recommends to SC22 that the following Standard be withdrawn when it reaches the end of its five-year review period:

- ? ISO/IEC 13814:1998 Generic package of complex elementary functions for Ada

[\[Discussion\]](#) [\[Agenda\]](#)

Resolution 40-7:

WG9 endorses the following New Work Item Proposal for amendments to the Ada Language Standard and forwards it to SC22 for approval:

PROPOSAL FOR A NEW WORK ITEM

| | |
|--|-------------------------------|
| Date of presentation of proposal: 2001-TBD-TBD | Proposer: JTC1/SC22 |
| Secretariat: ANSI | ISO/IEC JTC 1 N XXXX |

A proposal for a new work item shall be submitted to the secretariat of the ISO/IEC joint technical committee concerned with a copy to the ISO Central Secretariat.

Presentation of the proposal - to be completed by the proposer. Guidelines for proposing and justifying a new work item are given in ISO Guide 26.

Title:

Information Technology - Programming Languages - Ada: Amendments

Scope:

This Amendment or amendments would modify or add capabilities to the language specifications of ISO/IEC 8652, the international standard for the programming language Ada. The target audience would be all users of Ada and all vendors of Ada language processors. Note: If appropriate, additional capabilities may be developed in the form of related standards rather than amendments.

Purpose and justification: The international standard for Ada, ISO/IEC 8652, was published in 1995. A Technical Corrigendum, ISO/IEC 8652.Corr 1, corrected minor errors in the standard and was published in 2001. With 6 years' experience with the standard, and 10 years by the envisaged publication date of an Amendment, a number of shortcomings have been identified. The Amendments are intended to improve the standard in selected areas and integrate the progress of 10 more years of research and practice in programming languages into the Ada language standard. Note: Some of the amendments may also take the form of related standards; the proper mechanism will be chosen when the capability to be added has been specified in sufficient detail to allow an informed decision.

Programme of work:

If the proposed new work item is approved, which of the following document(s) is (are) expected to be developed?

a single International Standard

more than one International Standard (expected number:)

a multi-part International Standard consisting of parts

an amendment or amendments to the following International Standard(s): ISO/IEC 8652

.....

a technical report , type

Relevant documents to be considered: The current international standard for Ada, ISO/IEC 8652.

Cooperation and liaison:

No formal liaison is anticipated. Informal liaison will be maintained with the various working groups that share an interest in Ada.

Preparatory work offered with target date(s):

Initial working drafts will be made available at plenary meetings of ISO/IEC JTC1/SC22 in the 2004-2007 time frame.

Signature:

James W. Moore, Convener, ISO/IEC JTC1/SC22/WG9

Will the service of a maintenance agency or registration authority be required? **NO**

- If yes, have you identified a potential candidate?

- If yes, indicate name

Are there any known requirements for coding? **NO**

-If yes, please specify on a separate page

Does the proposed standard concern known patented items? **NO**

- If yes, please provide full information in an annex

Comments and recommendations of the JTC 1 Secretariat - attach a separate page as an annex, if necessary

Comments with respect to the proposal in general, and recommendations thereon:
 It is proposed to assign this new item to JTC 1/SC 22/WG9

Voting on the proposal - Each P-member of the ISO/IEC joint technical committee has an obligation to vote within the time limits laid down (normally three months after the date of circulation).

| | | |
|---|--|---|
| Date of circulation: YYYY-MM-DD | Closing date for voting: YYY-MM-DD | Signature of JTC 1 Secretary: Lisa A. Rajchel |
|---|--|---|

| <i>NEW WORK ITEM PROPOSAL - PROJECT ACCEPTANCE CRITERIA</i> | | |
|--|--|--|
| Criterion | Validity: | Explanation: |
| A Business Requirement | | |
| A.1 Market Requirement | Essential: <input checked="" type="checkbox"/> Desirable: Supportive: | See above justification |
| A.2 Regulatory Context | Essential: Desirable: Supportive: <input checked="" type="checkbox"/> Not Relevant: | The use of a standardized language is often a condition of a government acquisition, including acquisitions performed in a regulatory context. |
| B. Related Work | | |
| B.1 Completion/Maintenance of current standards | Yes: <input checked="" type="checkbox"/> No: | The work is related to the continued maintenance of the language specification, ISO/IEC 8652. |
| B.2 Commitment to other organization | Yes: No: <input checked="" type="checkbox"/> | |
| B.3 Other Source of standards | Yes: No: <input checked="" type="checkbox"/> | |
| C. Technical Status | | |
| C.1 Mature Technology | Yes: <input checked="" type="checkbox"/> No | The amendments will reflect existing technology and practice. In general, they will already be implemented in some, if not all, language processors prior to standardization. |
| C.2 Prospective | Yes: N/A | |

| | | |
|--|------------------------|---|
| Technology | No: | |
| C.3 Models/Tools | Yes: N/A No: | |
| D. Conformity Assessment and Interoperability | | |
| D.1 Conformity Assessment | Yes: No: X | Conformity assessment for Ada language processors to ISO/IEC 8652 is standardized by ISO/IEC 18009. |
| D.2 Interoperability | Yes: No: X | The work supports "portability" of source programs among various platforms. Some contemplated amendments or secondary standards are specifically geared towards improved interchange with other programming languages. |
| E. Other Justification | | |

It is expected that, at least, the following national bodies will actively support this effort: Canada, Germany, Japan, United Kingdom, United States.

[\[Discussion\]](#) [\[Agenda\]](#)

Resolution 40-8:

ISO/IEC JTC1/SC22/WG9 requests that SC22 request JTC1 and any other appropriate bodies to take action to ensure that ISO/IEC TR 15942 be made freely available on a web site.

[\[Discussion\]](#) [\[Agenda\]](#)

Appreciation

Resolution 40-9:

WG9 expresses its gratitude to Ada-Europe and the National Body of Belgium for their gracious accommodations in hosting Meeting #40.

[\[Discussion\]](#) [\[Agenda\]](#)

Resolution 40-10:

ISO/IEC JTC1/SC22/WG9 expresses its grateful appreciation to Clyde Roby for maintaining the WG9 Web Page.

[\[Discussion\]](#) [\[Agenda\]](#)

Resolution 40-11:

Noting SC22's approval of the Technical Corrigendum to ISO/IEC 8652 and its subsequent submission to ITTF for publication, WG9 congratulates the Corrigendum editors, Randy Brukaradt and Erhard Ploedereder.

[\[Discussion\]](#) [\[Agenda\]](#)

Adjournment

The meeting was adjourned at 12:00 noon.

[\[Agenda\]](#)

Appendix

Charter of the HRG

Approved by WG9, 28 April 1995

The HRG will synthesize the essential requirements of typical sector-specific standards for high integrity applications which have a bearing on Ada and its supporting tools. Guidance, including interpretation and amplification of Annex H will be developed for users, implementers, evaluators and certifiers. The guidance produced will be in a form suitable for reference in procurement.

Sector-specific standards to be considered are such as:

- ? DO-178B (Civil avionics)
- ? IEC 65A/CENELEC (Generic/rail)
- ? IEC 880 (Nuclear)
- ? Interim DEFSTAN 00-55 (UK Defence)
- ? ITSEC (EU Security)

The HRG will undertake the following activities:

Annex H Issues

The HRG will produce and maintain an interpretations document.

The HRG will investigate pragma enhancement, such as additional parameters for restriction pragmas and additional pragmas.

The HRG will provide implementation advice, covering areas such as compilation and validation.

Taxonomy of Techniques

The HRG will produce a taxonomy of techniques for the construction and analysis of high

integrity software, such as:

- ? The use of annotations in program construction
- ? Error detection by static analysis
- ? Design confirmation by static analysis
- ? Static timing analysis

Language Issues

The HRG will investigate the interaction of language issues with high integrity requirements, such as:

- ? Deterministic execution with compiler optimization and other property-based subsets
- ? Concurrency
- ? Issues of migration from Ada 83

Bindings and Interfaces

The HRG will support the interoperation of high integrity software and tools with other systems, such as:

- ? ASIS (Ada Semantic Information Specification)
- ? Ada compilers and run-time environments
- ? CORBA (Common Object Request Broker Architecture)

[\[Agenda\]](#)

References

WG9 Documents

[N345](#) Convener's Report, 1 July 1998

[N363](#) Minutes and Resolutions of Meeting #36

[N367](#) Minutes and Resolutions for Meeting #37 of ISO/IEC JTC1/SC22/WG9, Friday, 22 October 1999, Redondo Beach, California, USA

[N372](#) Draft Minutes and Resolutions for Meeting #38 of ISO/IEC JTC1/SC22/WG9, Friday, 30 June 2000, Potsdam, Germany

[N373](#) SC22/WG9 Convener's Report, 11 July 2000

[N374](#) DRAFT Submitted for WG9 Email Ballot, Programming Languages -- Ada, Defect Reports, Part 1, 2 August 2000

[N375](#) DRAFT Submitted for WG9 Email Ballot, Programming Languages -- Ada, Defect Reports, Part 2, 2 August 2000

[N376](#) DRAFT Submitted for WG9 Email Ballot, Programming Languages -- Ada, Records of Response 1, 2 August 2000

[N377](#) DRAFT Submitted for WG9 Email Ballot, Programming Languages -- Ada, Technical Corrigendum 1, 2 August 2000

[N378](#) Plenary Meeting Report of ISO/IEC JTC1/SC22, 11-15 September 2000, Nara, Japan

[N379](#) DRAFT Submitted for SC22 Approval, Defect Reports Part 1, for ISO/IEC 8652:1995, Programming Languages -- Ada, 1 October 2000

[N380](#) DRAFT Submitted for SC22 Approval, Defect Reports Part2, for ISO/IEC 8652:1996, Programming Languages -- Ada, 1 October 2000

[N381](#) DRAFT Submitted for SC22 Approval, Records of Response, for ISO/IEC 8652:1995, Programming Languages -- Ada, 1 October 2000

[N382](#) DRAFT Submitted for SC22 Approval, Technical Corrigendum 1, for ISO/IEC 8652:1995, Programming Languages -- Ada, 1 October 2000

[N383](#) Announcement and Draft Agenda, Meeting #39 of ISO/IEC JTC1/SC22/WG9, Friday, 17 November 2000, Laurel, Maryland, USA

[N385](#) Draft Minutes and Resolutions for Meeting #39 of ISO/IEC JTC1/SC22/WG9, Friday, 17 November 2000, Laurel, Maryland, USA.

[N386](#) Announcement and Draft Agenda, Meeting #40 of ISO/IEC JTC1/SC22/WG9, Friday, 18 May 2001, Leuven, Belgium

[N387](#) Detailed Agenda, Meeting #40 of ISO/IEC JTC1/SC22/WG9, Friday, 18 May 2001, Leuven, Belgium

External Web Sites

Table of ISO Price Codes: <http://www.iso.ch/infoe/order.html#PriceIntro>

ITTF Web Site: <http://www.iso.ch/ittf/>

WG9 Web Site: <http://www.dkuug.dk/JTC1/SC22/WG9/>

ACAA Web Site: <http://www.ada-auth.org/~acats/grab-bag.html>

Ada Europe 2001 Conference Web Site: <http://www.ada-europe.org/conference2001.html>

[[Agenda](#)]

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