

# ISO/IEC JTC1/SC22/WG9 N372r2

*Prepared 5 July 2000, Currie Colket, Meeting Secretary*

*Revised 22 October 2000, Jim Moore, Convener*

*Approved 17 November 2000*

## **Minutes and Resolutions**

### **Meeting #38 of ISO/IEC JTC1/SC22/WG9**

### **Friday, 30 June 2000**

### **Potsdam, Germany**

The announcement and preliminary agenda for this meeting were circulated as [N370](#). The detailed agenda for this meeting was circulated as [N371](#).

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The 38th meeting of ISO/IEC JTC1/SC22/WG9 was hosted by the national body of Germany, in conjunction with the Ada-Europe'2000 conference. The meeting began at 9:00 am and was recessed at 12:30 pm.

The meeting was held in a meeting room of the conference hotel:

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*Seehotel Potsdam*

*An der Pirschheide*

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## **Agenda**

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- [Project Editor Reports](#) (as needed):
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  - [ISO/IEC 11430 and 11729](#), Ken Dritz
  - [ISO/IEC TR 11735](#), Nasser Kettani
  - [ISO/IEC 12227](#), Andreas Koeller
  - [ISO/IEC 13813](#), Don Sando
  - [ISO/IEC 13814](#), Jon Squire
  - 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](#)")
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  - [Planned ISO/IEC 8652:1995/CORR, Technical Corrigendum](#), Randy Brukardt
- [Report of ASIS Rapporteur Group](#), Currie Colket (chair)
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## [References](#)

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## Detailed Agenda Items

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### Opening Orders, Jim Moore, Convener

#### Call to Order

The meeting began at 9:00 am.

#### Appointment of Meeting Secretary

Currie Colket agreed to serve as meeting secretary.

[\[Resolution 38-8\]](#)

#### Approval of Agenda

After one change, the agenda was approved as shown above. It was decided to recess the meeting at the conclusion of the agenda rather than adjourning it. The reason for this decision is the need to conduct a follow-up email ballot. Because some national delegations are delegated voting authority only for the duration of a meeting, it was decided to extend the duration of the meeting to include the follow-up ballot.

#### Approval of Minutes of Meeting #37

##### Information:

The minutes of meeting #37 appear in document [N367](#).

##### Resolutions:

[\[Resolution 38-1\]](#)

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## National Body Reports and Introductions

### Attendees:

National Body Representatives:

- Canada: Stephen Michell

- Germany: Erhard Ploedereder
- Japan: Kiyoshi Ishihata [see [report](#)]
- Switzerland: Alfred Strohmeier
- UK: John Barnes [see [report](#)]
- USA: Joyce Tokar (Head of Delegation), Mike Kamrad, Currie Colket, and Ben Brosgol [see [report](#)]

WG9 Officers (if not already listed):

- James W. Moore (convener)
- Randy Brukardt (co-editor, ISO/IEC 8652)

Others:

- Those sending regrets include: Alan Burns (HRG Chair), J-P Rosen (France), Clyde Roby (webmaster), Don Sando (co-editor, ISO/IEC 13813), Brian Wichmann (editor, ISO/IEC TR 15942)

## Reports:

### Japan:

Kiyoshi Ishihata was pleased to announce that the Ada Language Programming Standard, ISO/IEC 8652:1995, has been translated to Japanese and is now available.

### UK:

The BSI Ada panel recently held a meeting. The main purpose was to review the Corrigendum and associated documents. There was general satisfaction with the approach and structure of the documents. It is pleasing to report that new members joined the panel thus indicating a continuing strong UK interest in Ada 95 and its evolution.

### USA:

Since the last meeting of WG 9 a meeting of the ARG was hosted by DDC-I in March 2000.

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## Convener's Report

### WG9 Web Page

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

[[Resolution 38-9](#)]

## **Ada Conformity Assessment Standard**

The Ada Conformity Assessment standard was published 1 December 1999 after successful completion of FDIS balloting by JTC1. The final standard was published less than 12 months after the approval of the new work item by JTC1, less than 15 months after SC22 endorsed the work item and less than 18 months after the need for the standard became apparent. Even these impressive numbers, though, understate the accomplishment--the final text of the standard was available to the Ada community less than 12 months after its need became apparent. We appreciate the continued attention to this document by its editor, Erhard Ploedereder.

[\[Resolution 38-11\]](#)

## **Publicity**

The convener is pleased to note that an article about the Conformity Assessment standard was written by Randy Brukardt for the January/February 2000 issue of IEEE Software and that John Barnes has written an article for the Ada Yearbook regarding the process for correcting the Ada standard.

[\[Resolution 38-12\]](#)

## **Guide for the Use of the Ada Programming Language in High Integrity Systems**

JTC1 approved Technical Report 15942, Guide for the Use of the Ada Programming Language in High Integrity Systems, in October 1999 and the document was published 1 March 2000. We appreciate the attention provided to this project by its editor, Brian Wichmann, and the HRG under the leadership of Alan Burns. Brian had to deal with some particular difficult editing issues in providing a document of this size, with correct indexing, in the required format for publication.

[\[Resolution 38-10\]](#)

## **Dwindling National Body Support**

Several nations have ceased active participation in the work of WG9 during recent years. By my count, we are left with five active participants: Canada, Germany, Japan, UK, USA. By the JTC1 directives, active participation by five nations is needed to pursue any new work item. Although this does not endanger the completion of our current work, nor the development of the Technical Corrigendum, it is clear that the prospects for future work, including language revision, is problematic.

Some nations have ceased participation in WG9 because of the expense required to participate in the parent body, SC22. I raised this issue at the recent plenary meeting of SC22. SC22 responded by making a recommendation to JTC1 that "O" (observing) members of SC22 should be permitted to act as "P" (participating) members of individual working groups. In recent balloting, JTC1 approved this proposal. It is my hope that several nations will take advantage of this policy to resume participation in WG9. The convener noted that Alfred Strohmeier was present, taking advantage of the new policy. The Convener will invite representatives of France, Russia, Spain, and Sweden to participate with WG9 under the new policy.

## **Inexpensive Availability of JTC1 Standards**

A special task force of JTC1 has developed a business plan for making JTC1 standards available in an inexpensive fashion. In recent balloting, JTC1 has approved the report of this task force. The report proposes, in part, a trial period for making standards available on the web for download at a price of \$25 US or some other nominal fee. The results of this ballot was forwarded to ISO Council for consideration during their June meeting. ISO Council approved a trial period for such a policy using the documents of selected subcommittees. Implementation details are forthcoming. It was noted that Technical Reports can already be made freely available. Currie Colket suggested that the ASIS Standard be included in this trial electronic offering.

## **Open Electronic Publication of Corrigendum to Ada Language Standard**

JTC1 has removed all obstacles to the open electronic publication of a Technical Corrigendum to the Ada language standard. JTC1 policy now allows all Technical Corrigenda to be made openly available on the Web.

However, the property rights to publish a Language Reference Manual merged with the corrigendum remain unclear. WG9 has adopted a plan that will permit such publication, but only if the Technical Corrigendum moves through the formal approval process without changes. Therefore, it is essential that all necessary modifications be made prior to the formal submission of the document by the United States National Body. The convener requests the continuing attention of the national bodies to this concern.

There are some AIs that will not be included in this Technical Corrigendum. The ARG is already considering a follow-on mechanism for the year 2002 to incorporate additional AIs. This may be in the form of a second Technical Corrigendum or an Amendment to the Ada Programming Language Standard.

## **Term of the Convener**

The three-year term of the convener expires at the September 2000 plenary of SC22. At this time, the convener plans to offer to continue for another three-year term.

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## **Scheduling of Meetings #39 and #40**

### **Information:**

The schedule for meetings #39 and #40 was approved:

- Meeting #39, Friday, 17 November 2000, Johns Hopkins University-Applied Physics Lab, Laurel, MD, in conjunction with SIGAda conference
- Meeting #40, Friday, 18 May 2001, Leuven, Belgium, in conjunction with the Ada-Europe conference

[\[Resolution 38-3\]](#)

[\[Agenda\]](#)

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## 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

(None)

### Unimplemented Resolutions

#### Resolution 34-8:

ISO/IEC JTC1/SC22/WG9 recommends to SC22 that the following standards be withdrawn when they reach the end of their five-year life. Both standards are relevant to the 1987 version of the Ada language standard rather than the current version.

- ISO/IEC 11430:1994 - Generic Package of Elementary Functions for Ada  
Project: JTC 1.22.10.02
- ISO/IEC 11729:1994 - Generic Package of Primitive Functions for Ada  
Project: JTC 1.22.10.03

*Status: OPEN. This resolution has been reported to SC22 and endorsed at their plenary meeting in August 1998. The SC22 Secretariat advises that routine processing by ISO Central Secretariat should result in withdrawing the standards before the end of 2000.*

#### 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. The SC22 Secretariat advises that routine processing by ISO Central Secretariat should result in withdrawing the standards before the end of 2001.*

#### Resolution 36-5:

WG9 resolves that the layout of the planned Technical Corrigendum to ISO/IEC 8652 will

contain the specific wording changes to the standard on a sub-clause by sub-clause basis, cross-referenced to an accompanying Defect Report [Disposition] document. The latter will be a compendium of the respective AIs, basically in the style that was used for publishing the AIs in Ada Letters during 1998.

*Status: OPEN. Normal processing of the Corrigendum is expected to implement this resolution.*

**Resolution 36-6:**

WG9 adopts the following timetable for the production of the Technical Corrigendum to ISO/IEC 8652:

- June 1999 -- initiate work on TC
- June 2000 -- present the TC and Defect Report [Disposition] to WG9 for review and approval
- Fall 2000 -- WG9 initiates the necessary actions for TC approval within ISO

with status to be reported at WG9 meetings.

*Status: OPEN. Normal processing of the Corrigendum is expected to implement this resolution.*

**Resolution 37-7:**

ISO/IEC JTC1/SC22/WG9 accepts the offer of the US National Body to be responsible for the preparation of Defect Reports, Defect Report Responses, a Technical Corrigendum and related supplementary material for ISO/IEC 8652. The terms of reference for producing the documents are: (1) The scope of the effort shall be limited to AIs approved by WG9; (2) The US shall invite review and comments from WG9 participants, the project editors of ISO/IEC 8652, and other concerned parties; (3) Preliminary results shall be shared with WG9 participants by May 15, 2000; and (4) Final results shall be contributed to WG9 by August 15, 2000.

*Status: OPEN. The convener requested that the US make its contribution to WG9 by August 1, 2000, to be followed immediately by a 30-day email ballot within WG9 to approve the TC. With this plan, the convener will know the result of the ballot prior to the plenary meeting of SC22 in September 2000. In formal terms, the email ballot will be an extension of the current meeting. The convener will adjourn the meeting following the conclusion of the ballot.*

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## **Project Editor Reports**

[\[Agenda\]](#)

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## Project Editor Report, IS 11430 and 11729

### Information:

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

Project 22.10.02 -- IS 11430:1994 Generic Package of Elementary Functions for Ada, Ken Dritz, editor

Project 22.10.03 -- IS 11729:1994 Generic Package of Primitive Functions for Ada, Ken Dritz, editor

The contents of 11430 and 11729 are substantively subsumed by the subsequent approval of the 1995 revision of 8652. WG9 has requested that these standards be withdrawn at the conclusion of their five-year review period.

*From Plenary Meeting Report of ISO/IEC JTC1/SC22, 24-28 August 1998, [N351](#):*

Resolution 98-Q: Standards for Periodic Review -- ISO/IEC JTC 1/SC22 ... recommends that the following standards be withdrawn:

- ISO/IEC 11430:1994 Ada Generic Package of Elementary Functions
- ISO/IEC 11729:1994 Ada Generic Package of Primitive Functions ...

*From Convener's Report, 28 June 1999, [N364](#):*

Withdrawal of this standard [11430 and 11729] was approved by the 1998 SC22 plenary.

### Report:

*From Ken Dritz, 14 March 2000:*

For 11430 and 11729, nothing to report.

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## 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 Convener:*

Because TR 11735 was completed in 1996, its five-year review date falls in the year 2001. At its September 2000 plenary, SC22 will take a position on the future of this TR. Therefore, at this meeting, we must make a recommendation. We have three choices: confirm, revise, withdraw. I have drafted a recommendation to withdraw on the grounds that the TR is based upon the 1987 version of the language.

Proposed Resolution:

[\[Resolution 38-4\]](#)

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## 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

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## Project Editor Report, ISO/IEC 13813

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

Report:

*From Don Sando, 18 June 2000:*

There has been no activity with respect to ISO/IEC 13813 since the last WG9 meeting.

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## **Project Editor Report, ISO/IEC 13814**

### **Information:**

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

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## **Report of Ada Rapporteur Group, Erhard Ploedereder (chair)**

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### **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

#### **Report:**

*From Erhard Ploedereder, 23 June 2000*

The ARG met in Phoenix, USA on March 29-31, 2000. At the meeting the Technical Corrigendum for the Annexes was carefully reviewed as well as the changes to the Technical Corrigendum for the Core language (which had been reviewed at the September 1999 meeting). At this point, a small number of Defect Reports are still not completely settled. They are on the agenda for the ARG meeting that commences after the WG9 meeting in Potsdam. Hopefully they will be resolved (or else they will be dropped from the Corrigendum). Also, an editorial review of all the documents (Defect Reports, Technical Corrigendum, Record of Responses) is currently underway.

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### **Planned ISO/IEC 8652:1995/CORR, Technical Corrigendum, Randy Brukardt**

#### **Information:**

*Resolution 36-4, [N363](#):*

In the judgment of WG9, the interests of the Ada community are best served by developing a Technical Corrigendum document rather than by revising the standard

*Resolution 36-5, [N363](#):*

WG9 resolves that the layout of the planned Technical Corrigendum to ISO/IEC 8652 will contain the specific wording changes to the standard on a section by section basis, cross-referenced to an accompanying Defect Reports document. The latter will be a compendium of the respective AIs, basically in the style that was used for publishing the AIs in Ada Letters during 1998.

*Resolution 36-6, [N363](#):*

WG9 adopts the following timetable for the production of the Technical Corrigendum to ISO/IEC 8652:

- July 1999 -- produce the wording changes by adding them to a special section in the AIs.
- Sept 1999 -- discuss and refine the results at an ARG meeting
- June 2000 -- present the TC to WG9 for review and approval
- Fall 2000 -- WG9 initiates the necessary actions for TC approval within ISO

*From SC22 Secretariat, 27 April 1999 [regarding procedures for progressing the CORR]:*

You don't need an NP and, unless you are changing project editors, you don't need [any] other blessing from SC22 or JTC 1. Having notified me and assuming that the project editors for the Technical Corrigendum will be the same as for the revised 8652 (i.e., Ploedereeder and Brukaradt), WG9 can proceed to develop it. If you are changing project editors, SC22 will have to approve the new one(s). Otherwise, there is nothing here [that] requires SC22 approval until the Technical Corrigendum is ready for ballot. It will be developed as part of Project JTC 1.22.10.01.

*Resolution 37-7, [N367](#):*

ISO/IEC JTC1/SC22/WG9 accepts the offer of the US National Body to be responsible for the preparation of Defect Reports, Defect Report Responses, a Technical Corrigendum and related supplementary material for ISO/IEC 8652. The terms of reference for producing the documents are: (1) The scope of the effort shall be limited to AIs approved by WG9; (2) The US shall invite review and comments from WG9 participants, the project editors of ISO/IEC 8652, and other concerned parties; (3) Preliminary results shall be shared with WG9 participants by May 15, 2000; and (4) Final results shall be contributed to WG9 by August 15, 2000.

*From Minutes of Meeting #37, [N367](#):*

- WG9 Meeting, October 1999: Assign responsibility for the preparation of Defect Reports, Defect Report Responses, Technical Corrigendum and any supplementary material to US National Body. The scope of the effort would be limited to AIs approved by WG9. The US would be directed to invite review and comments from WG9 HODs, the project editors of ISO/IEC 8652, and other concerned parties.
- May 15, 2000: US circulates preliminary results to WG9 HODs for informal review.
- WG9 Meeting June 30, 2000: Discuss readiness of the material for ballot.
- August 15, 2000: US completes document development and makes a formal contribution of the documents to WG9.
- WG9 Meeting, September 2000: Up/down vote on resolution to accept USNB contribution and forward documents to SC22 for ballot.
- October 2000: Commence SC22 letter ballot on Technical Corrigendum and Defect

## Response Reports.

By its March 2000 meeting, the ARG should complete its review of the Technical Corrigendum by considering the issues related to the annexes. However, it is probable that there will still be outstanding Ada Issues that will not be resolved for incorporation into the TC. It is therefore possible that there may be a second TC in the future. Furthermore, some issues may not be suitable for resolution by a TC. For example, an extension of the language such as "with type" might have to be performed by Amendment or Revision rather than a TC.

The actual preparation of the TC and related material will be performed under a contract to The MITRE Corporation. MITRE will contract for the documents on a "work for hire" basis and will copyright the results. The copyright notice will provide appropriate permissions to ensure that the documents can be widely distributed. The completed documents will be turned over to the USNB for contribution to WG9. The USNB will ensure that review occurs during document preparation so that the completed documents are ready for approval by WG9 and SC22.

The Defect Reports and the TC will include a discussion of "paragraph numbers" so that users of the standard will know to simply count the paragraphs within the subclauses.

### *From Convener:*

Because the Fall 2000 meeting of WG9 will be conducted in November, the convener plans to achieve formal WG9 approval of the Technical Corrigendum via a 30-day email ballot immediately following its contribution by the United States National Body. The Convener presumes that the document will be approved by WG9 without substantive comment so that it may be forwarded immediately to SC22 for approval.

### **Report:**

*From Randy Brukardt, 22 June 2000*

The draft Corrigendum is in a nearly final form. (A copy of it was distributed by Jim Moore prior to the meeting, and also is available on the [ACAA web site](#). The ARG will meet immediately after the WG9 meeting to work out the remaining technical issues.

There is also an associated set of Defect Reports (containing additional information on each issue). Finally, there is a Record of Response document (required by SC22), which gives the answers to issues that do not require wording changes, yet still are not necessarily obvious from the standard. The ARG is currently reviewing these documents.

The intention is that ARG will approve final drafts of all of these documents at the following meeting. The documents will then be submitted to WG9 to initiate the processing of the Corrigendum and related documents by WG9 and SC22.

As part of this work, a tool has been developed to generate the Ada Reference Manual (and the AARM as well) in the modern RTF and HTML formats. The RTF format is intended to be used with Word 97 to create printable versions of the documents, while the HTML version provides a hyper-linked version of the documents.

The tool works on source input which is a lightly modified version of the original Intermetrics Scribe input files. The tool supports almost all of the capabilities of the original processor

(including automatic numbering of clauses and paragraphs, and automatic generation of Annexes K [attributes], L [pragmas], M [implementation-defined characteristics], N [glossary], P [syntax summary], and the Index.

These documents provide us with several needed capabilities:

- We can meet an ISO requirement of having a version of the standard available which includes all Corrigendum changes. Previously, we had no way to update the standard.
- We now have the "official" text of the standard in popular formats, especially HTML. Previously, HTML versions of the standard were constructed from various sources, sometimes by hand, containing errors and poorly formatted sections, and sometimes have had additional restrictions placed on them.

We intend to produce a RM including all of the Corrigendum changes for free distribution in RTF and HTML formats soon after WG9 approval of the Corrigendum. This will help by making the Corrigendum changes widely and freely available, especially to users and Ada vendors.

**Discussion:**

There was considerable discussion on the formats to be made available. The Technical Corrigendum and the resulting RM will be made available in HTML, PDF, and RTF. The format used for the original ISO/IEC 8652: 1995 will be used instead of the current ISO format. The ISO format does not support paragraph numbers and the fonts are problematic for a document with many code examples. The German delegation noted that the ISO template does not work on German word processing systems. It was noted that the use of Microsoft Word is problematic as the paragraph numbers are done in a floating frame, which is incompatible from version to version. The use of color was suggested. As the document must be useable as a black and white document, the conversion to color was viewed as unnecessary. The Technical Corrigendum and the resulting merged RM would be made available. The Annotated ARM would also be made available. There are serious bugs in the AARM. It formally identifies itself as a non-binding interpretation. New tests for the Technical Corrigendum would not be developed until after the Technical Corrigendum was formally approved.

**Resolution:**

[[Resolution 38-5](#) and [Resolution 38-6](#)]

**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

*From Convener:*

Standard was published 1 December 1999.

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## 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

#### Report:

There was an ASIS Workshop on 21 October 1999 at Redondo Beach, California in conjunction with SIGAda'99. The workshop title was "ASIS Extensions for Higher Level Abstractions" and focused on a framework to support the development of ASIS Extensions for higher level abstractions, useful to vendors, developers, and ASIS users. The Workshop Report was published in Ada Letters, March 2000, Volume XX, Number 1, pp. 19-24.

Ada-Europe 2000 included 4 papers on ASIS. These were:

1. A Supporting Tool for Development of Self-Measurement Ada Programs, *Y. Nonaka, J. Cheng, and K. Ushimima* - This paper presents an innovative use of ASIS to support dynamic analysis. ASIS is traditionally a static analysis tool. The paper presents an approach to instrument an Ada application for dynamic analysis using ASIS.
2. ASIS-for-GNAT: A Report of Practical Experiences, *S. Rybin, V. Fofanov, A. Stronhmeier, and A. Kuchumov* - This paper identifies problems with the existing ASIS interface and recommends improvements for future ASIS Standards.
3. Generation of Interface Design Documents Using ASIS, *S. V. Hovater, W. Marksteiner, and A. Butiurini* - This paper describes an ASIS-based tool which automatically produces Interface Design Documents from Ada source code using US DOD J-016-1995 formats (formally US MIL-STD 498).
4. An Ada95 Programming Style Checker Using the GNAT ASIS Implementation, *P. Closhen and H. J. Hoffmann* - This paper describes the development of an ASIS-based tool which provides a rule framework for analyzing Ada code for compliance with Quality and Style guidelines. The Darmstadt University of Technology is considering making this tool publicly available.)

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## **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 SC22 Programme of Work, Updated 30 September 1999:* DTR 15942 has been submitted for JTC1 Letter Ballot ending 19 October 1999.

*From ISO Central Secretariat:* ISO/IEC TR 15942 was published 1 March 2000.

#### **Report:**

*From Alan Burns, 16 June 2000*

The HRG has produced a draft work item on Ravenscar; it has a meeting planned in September where the aim is to agree on this work item. The HRG plans to present a NWI for approval at the Fall WG9 meeting.

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## **Liaison Reports**

### **POSIX, Ted Baker**

#### **REPORT OF LIAISON FROM WG9 TO IEEE PASC AND WG15**

In the arena of POSIX Ada bindings, the combined POSIX.5,.5b, and .5c standard is moving ponderously toward ISO/IEC JTC1 fast-track ballot. The issue at present is what should be the title of the ISO standard. The IEEE has treated each increment to POSIX.5 (i.e., POSIX.5b and POSIX.5c) as an amendment, but they are all published as a single document. In contrast, the ISO ballot will be for a REVISION that replaces the current ISO/IEC 14519 by the entire new document. The title needs adjustment to reflect this.

Please urge your national representatives to vote "yes" when the ballot appears.

Since the POSIX.5c standard was approved by IEEE, there are only two active IEEE PASC projects that include Ada bindings, namely:

- 1003.5f (Ada binding to 1003.21 - Realtime Distributed Systems)
- 1003.5g (Ada binding to Realtime Interfaces)

Both of these groups are still at work developing drafts. They are moving very slowly, and the drafts are not yet gotten ready for ballot.



The latter project is associated with the SAE Avionics Operating Systems working group and includes bindings for some of the functionality of POSIX.1d and POSIX.1g, but there is no project to develop full Ada bindings for the POSIX.1d and POSIX.1j standards.

Outside of the Ada bindings area, the big project is 1003.1g Alignment with the Single Unix Specification. The three POSIX and Unix standards groups, ISO/IEC JTC1/SC22/WG15, IEEE PASC, and The Open Group, are jointly working on a unified UNIX/POSIX standard, covering the C-language API, shell, and utilities. The WG15 and IEEE POSIX standards projects were already unified, so the big change here is bringing them together into a single working group with The Open Group. The joint working group is called the "Austin Group", after the location of their inaugural meeting.

Lots of information about this project is available on line, including the Draft 3 document (see "<http://www.opengroup.org/austin/>").

I have been monitoring the work by e-mail, and it appears to be moving ahead quite well. Within the snowstorm of e-mail, I noticed the following few classes of issues that may serve to give a flavor of the activity. There were differences in terminology, including the uses of imperatives "must", "shall", "may", etc. between the standards of The Open Group and POSIX, which need to be resolved. The Austin Group draft standard is bringing in the POSIX.1g (Sockets and XTI) standard. This is causing some debate over details, since The Open Group's corresponding standard differs from POSIX.1g. The incorporation of POSIX.1d (Additional Realtime Extensions) and POSIX.1j (Advanced Realtime Extensions) is also causing some debate over details.

I had originally hoped that this process might provide a vehicle for getting some small changes to the POSIX threads standard that would make it more compatible with Ada tasking. That sort of change is out of scope. The scope of the project is limited to merging existing standards, plus the incorporation of standing Interpretations.

There is no corresponding activity on the Ada API standards, because there is no corresponding standard of The Open Group.

*--Ted Baker, WG15 Liaison to WG9, WG9 Liaison to WG15, and PASC WG15 US TAG Liaison to WG9 US TAG*

[\[Agenda\]](#)

### **Ada Resource Association, Joyce Tokar**

The ARA met at SIGAda'99 (October 1999) and at STC 2000 (May 2000). Some of the meeting highlights include:

1. Compiler certification - Vendors are not certifying compilers as customers are not requiring certification. This will affect revenues for conformance testing.
2. New conformance tests - The ARA is discouraging the incorporation of new conformance tests without the concurrence of ARA members.
3. Increased marketing - The ARA is supporting the exhibition of the Ada Booth by

SIGAda volunteers at conferences. They are also supporting the publication of Ada related articles. They are maintaining the AdaIC Home Page and are currently investing ways to have this home page selected by search engines.

4. Next meeting - The ARA plans to meet again this August by telecomm and in person at the SIGAda 2000 Conference in November.

[\[Agenda\]](#)

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## **Unfinished Business**

No unfinished business was introduced.

[\[Agenda\]](#)

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## **New Business**

No new business was introduced.

[\[Agenda\]](#)

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## **Administrative Actions**

### **Action:**

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

### **Resolution:**

[\[Resolution 38-2\]](#)

### **Action:**

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

### **Resolution:**

[\[Resolution 38-7\]](#)

[\[Agenda\]](#)

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## Final Consideration of Resolutions

All resolutions were approved unanimously.

### Administration

#### Resolution 38-1:

The minutes of Meeting #37 as contained in document [N367](#) are approved.

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

#### Resolution 38-2:

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 continuing service:

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

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

#### Resolution 38-3:

WG9 schedules future meetings as follows:

- Meeting #39, Friday, 17 November 2000, Johns Hopkins University-Applied Physics Lab, Laurel, MD, in conjunction with SIGAda conference
- Meeting #40, Friday, 18 May 2001, Leuven, Belgium, in conjunction with the Ada-Europe conference

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

### Work Programme

#### 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

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

#### Resolution 38-5:

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.

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

**Resolution 38-6:**

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.

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

**Appreciation**

**Resolution 38-7:**

WG9 expresses its gratitude to Ada-Europe and to the German National Body for their gracious accommodations in hosting Meeting #38.

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

**Resolution 38-8:**

ISO/IEC JTC1/SC22/WG9 expresses its grateful appreciation to Currie Colket for serving as secretary of Meeting #38.

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

**Resolution 38-9:**

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

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

**Resolution 38-10:**

Noting the publication of ISO/IEC Technical Report 15942, Guidance for the Use of the Ada Programming Language in High-Integrity Systems, WG9 congratulates its editor, Brian Wichmann.

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

**Resolution 38-11:**

Noting the publication of ISO/IEC 18009, Ada Conformity Assessment, WG9 congratulates its editor, Erhard Ploedereder.

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

**Resolution 38-12:**

ISO/IEC JTC1/SC22/WG9 expresses its congratulations and its appreciation to Randy Brukart for the preparation of the article on ISO/IEC 18009 appearing in the January/February 2000 issue of IEEE Software and to John Barnes for the preparation of the article appearing in the Ada Year Book.

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

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**Recess**

At 12:30 pm, the meeting was recessed until the call of the convener. On 2 September 2000, the meeting was adjourned via an email announcement.

[\[Agenda\]](#)

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**References**

**WG9 Documents**

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

[N351](#) Plenary Meeting Report of ISO/IEC JTC1/SC22, 24-28 August 1998

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

[N364](#) Convener's Annual Report and Business Plan, June 1999

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

[N370](#) Announcement and Draft Agenda, Meeting #38 of ISO/IEC JTC1/SC22/WG9, Friday, 30 June 2000, Potsdam, Germany

[N371](#) Detailed Agenda, Meeting #38 of ISO/IEC JTC1/SC22/WG9, Friday, 30 June 2000, Potsdam, Germany

**Web Sites**

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

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

[\[Agenda\]](#)

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