SIGAda

The ACM Special Interest Group on Ada

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SIGAda Annual Report
1 July 2002 - 30 June 2003

8 August 2003

SIGAda is chartered under ACM as one of approximately 35 Special Interest Groups. This document represents an annual report for the SIGAda Activities for the ACM calendar year of 1 July 2002 to 30 June 2003.

SIGAda Purpose

Our By-Laws, approved on 18 June 1984 identify that SIGAda's activities will include:

1. Collecting and disseminating information in the specialty, through a newsletter and other publications approved by the Publications Board of the ACM;
2. Organizing sessions at conferences of the ACM;
3. Sponsoring conferences, symposia, and workshops;
4. Organizing working groups for education, research, and development;
5. Serving as a source of technical information for the Council and subunits of the ACM;
6. Serving as an external technical representative of the ACM when authorized by the Council or the Executive Committee of the ACM;
7. Working with subunits of the ACM on technical activities such as lectures or professional development seminars;
8. Fostering the organization of local groups and activities;
9. Determining and representing members' opinions with respect to the specialty; and
10. Interacting with non-ACM organizations. Such relationships will be in accordance with ACM guidelines regarding external relationships.

SIGAda Mission Statement

The SIGAda Mission is updated periodically to reflect SIGAda's mission. It is found in the SIGAda Fact Sheet. The current version is posted online at: http://www.acm.org/sigada/sigada_fact_sheet.html. The Mission Statement reads:

ADVANCING HUMAN CAPABILITIES   THROUGH INFORMATION TECHNOLOGY

ACM SIGAda
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The ACM SIG on Ada deals with the Ada language and a broad span of issues related to its usage, teaching, standardization, and implementation. SIGAda members include practitioners, educators, researchers, and managers from a wide range of organizations in industry, academia, and government. Among the topics that SIGAda addresses are software engineering practice (with a particular focus on object technology), real-time applications, high-integrity & safety-critical systems, high-integrity and safety-critical systems, software education, and large-scale system development. SIGAda explores these issues through an annual international conference, special-purpose Working Groups, active local chapters, and its quarterly Ada Letters publication.

SIGAda Description for ACM Guide

ACM publishes a Guide to describe all of its SIGs. The ACM Guide is updated annually as an advertisement for its SIGs and to encourage ACM members to join the SIGs. The current version of the ACM Guide is posted online at: http://www.acm.org/sigs/guide98.html (sic). The description of SIGAda in the Guide reads:

The ACM Special Interest Group on Ada Programming Language is a powerful resource for the software community's ongoing understanding of the scientific, technical and organizational aspects of the use, standardization, environments, and implementations of the Ada language. The annual SIGAda conference is a major event not only for Ada specialists but also for all enthusiasts in modern software topics such as process improvement, CASE, object-oriented methods, and software education. In addition to reduced registration fees at this joint industry/academia/government conference with its major vendor exhibits and at other SIGAda-sponsored workshops and meetings, members receive the quarterly newsletter ACM Ada Letters, which is the best way to stay current on Ada and Ada community happenings.

SIGAda Executive Committee

The SIGAda Executive Committee (EC) consists of 6 elected officers: the Chair, Vice Chair for Meetings and Conferences, Vice Chair for Liaison, Treasurer, Secretary, and International Secretary. The EC also includes the Past Chair for continuity from one administration to the next. The current slate was elected in 2001 for the term 1 July 2001 to 30 June 2003. The time period has been extended until 30 June 2005. The current slate includes:

Chair:	Mr. Currie Colket
Vice Chair for Meetings and Conferences:	Mr. David Harrison
Vice Chair for Liaison:	Mrs. Ann Brandon
Treasurer:	Dr. John McCormick
Secretary:	Mr. Clyde Roby
International Representative:	Dr. Jean-Pierre Rosen
Past Chair:	Dr. Ben Brosgol

Elections are planned for early 2005.

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ACM SIG Staff Liaison

The ACM SIG Staff Liaison supporting SIGAda is Mrs. Irene Frawley. We have been pleased with the wonderful support Mrs. Frawley has provided. We would also like to acknowledge the wonderful support from all of the ACM staff during 1 July 2002 to 30 June 2003.

ACM SIGAda Annual International Conference on the Ada Programming Language (SIGAda 2002) – Our Annual Conference

The ACM SIGAda Annual International Conference on the Ada Programming Language (SIGAda 2002) was held in Houston at Clear Lake in Texas from 8-12 December 2002. The conference was successful from a technical and financial perspective. There were 86 attendees. 18% of the attendees were from overseas, representing the countries of Belgium, France, Germany, Iceland, the Netherlands, Switzerland, Turkey, and the UK. Proceedings were produced as a printed hardcopy, which was distributed at the conference and as an electronic CDROM distributed after the conference. This CDROM has a host of interesting papers and presentations not provided with the hardcopy of the proceedings. In particular, the slide sets from our keynote speakers and invited speakers are available. Mr. Tucker Taft chaired an ISO/IEC JTC 1/SC 22 WG9 forum addressing the evolution of the Ada language from an ISO perspective. Dr. Robert Dewar addressed high quality achievable via free/open source software and its impact on software engineering. Mr. Robert Carey discussed the use of Ada 95 and CORBA in the National Ignition Facility (NIF) program to generate power via fusion. This is a very impressive use of Ada synchronizing the firing of 192 extremely high powered lasers to a really small target to create fusion. The power fired is equivalent to that used by the entire rest of the United States during the same nanosecond. The use of Ada appears to be extremely successful for this research; we only hope that the research also provides valuable results. Dr. Charles McKay challenged us to address critical needs in Ada 2005 for Mission & Safety Critical (MASC) computing systems. He believes that we should remember our roots & emphasize the current & future needs for embedded MASC systems. His excellent presentation resulted in a separate track during the WG9 forum to address these needs. Mr. Michael McEvilley discussed the essence of Information Assurance and why it is important to the Ada Community. The Information Assurance community is taking a new look at Ada to address its very challenging needs. Very special thanks to Dr. Salih Yurttas (General Chair), Dr. John McCormick (Program Chair), Dr. Ben Brosgol and Mr. Hal Hart (Exhibit Co-Chairs), Mr. Mark Glewwe (Publicity Chair), Mr. Clyde Roby (Webmaster and Proceedings Chair), Mr. Hal Hart (Treasurer), Dr. David Cook (the Tutorial Chair), Mr. Tom Panfil (Registration Chair), Dr. Michael Feldman (Education Working Group Chair), and Mr. David Harrison (Vice Chair for Meetings and Conferences) for an excellent conference. Every conference we have conducted since 1999 has been financially successful.

Our next conference will be at San Diego, California from 7-11 December 2003. The venue will be at the Red Lion Hanalei Hotel. It is convenient to the San Diego recreational and sight-seeing attractions. For more information, please see: *http://www.acm.org/sigada/conf/sigada2003*. Dr. Robert Leif, Newport Instruments, will be the Conference Chair; Dr. Ricky E. Sward, US Air Force Academy, will be the Program Chair.

Ada Letters, SIGAda's Quarterly Newsletter

SIGAda publishes 4 newsletters on an annual basis. The newsletter provides an excellent means to stay current in the Ada community. The Managing Editor is Dr. Martin Carlisle, USAF Academy and the Technical Editor is Mr. Pat Rogers, Software Arts and Sciences. Both have done an excellent job in producing a key resource to our SIGAda membership. It should be noted that ACM sets deadlines for

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newsletter submissions. SIGAda has a reputation at ACM for always being on time. The 4 newsletters published from 1 July 2002 – 30 June 2003 are summarized as:

Issue	Dated	Major Contents
Volume XXII Number 3	September 2002	• Reusable Software Components – Trudy Levine • Workshop Report – SIGAda 2002 "Creating a Symbiotic Relationship between XML and Ada" – Robert Leif • An Automatic "Visitor" Generator for Ada – Martin C. Carlisle and Ricky E. Sward
Volume XXII Number 4	December 2002	• Proceedings of the 11th Ada Real-Time Workshop held in Mount Tremblant Canada April 8-11, 2002. (125 pages) • WG9 Liaison Request with SIGAda – Currie Colket • Plan for Ada Application Program Interfaces (API) Management – Clyde Roby
Volume XXIII Number 1	March 2003	• Proceedings of the SIGAda 2003 held in Houston at Clear Lake in Texas from 8-12 December 2002.
Volume XXIII Number 2	June 2003	• Reusable Software Components – Trudy Levine • Automatic Prototype Generating via Optimized Object Model – Sheldon X. Liang, Lynn Zhang, Luqi • Real-time programming safety in Java and Ada – Bo Sanden • Dear Ada – Matthew Heaney

Ada Advocacy

Since 1994 SIGAda has conducted an "Ada Awareness Initiative". Its centerpiece has been our SIGAda professional booth display unit in exhibition halls at important software engineering conferences. This lets folks know that Ada is very much alive and a sound part of any software engineering effort having real-time, high integrity, high-assurance, and highly distributed requirements. We go to about 4-5 conferences a year. Via this exhibiting, SIGAda sustains Ada visibility ("name recognition"), provides various Ada-advocacy materials such as dozens of "Ada Success Stories" and the Walnut Creek Ada CD-ROM, and makes available Ada experts (our booth staff volunteers) who can intelligently answer questions, provide pointers and help, and debunk the mis-information about Ada that many attendees at these shows have. This program has been extremely successful and viewed as a highly important thrust in a recent fall 2002 survey of the SIGAda membership. We thank Mr. Hal Hart and Mrs. Ann Brandon for leading this important effort. SIGAda graciously acknowledges and thanks the Ada Resources Association (ARA), a consortium of Ada vendors, for their financial support of SIGAda's Ada Awareness Initiative and our booth activities. The shows supported from 1 July 2002 to 30 June 2003 included:

Dates	Location	Conference
4-8 November 2002	Seattle, Washington	OOPSLA 2002: Object Oriented Programming Systems Languages and Applications
19-23 February 2003	Reno, Nevada	SIGCSE 2003: SIGCSE 2003 Symposium
22-26 April 2003	San Francisco, California	Embedded Systems Conference West
28 April - 1 May 2003	Salt Lake City, Utah	Software Technology Conference (STC 2003)

SIGAda Awards

Started in 1994, the ACM SIGAda Awards recognize individuals and organizations that have made outstanding contributions to the Ada community and to SIGAda. The two categories of awards are:

> **Outstanding Ada Community Contribution Award**
> For broad, lasting contributions to Ada technology & usage.
> **ACM SIGAda Distinguished Service Award**
> For exceptional contributions to SIGAda activities & products.

The ACM SIGAda Award Committee (volunteers who have previously won an award) selects recipients from nominations submitted by SIGAda membership and other members of the Ada community.

SIGAda awards, in the form of the statuette of Lady Lovelace, are typically presented at the SIGAda conference each fall, with nominations closing approximately one month before the conference.

Awards presented during 1 July 2002 to 30 June 2003 were:

> Martin Carlisle (United States Air Force Academy) - Outstanding Ada Community Contributions
> David Cook (Shim Enterprises, Inc.) - SIGAda Distinguished Service Awards
> Robert Duff (SofCheck, Inc.) - Outstanding Ada Community Contributions
> Hal Hart (TRW, Inc.) - Outstanding Ada Community Contributions
> John McCormick (University of Northern Iowa) - SIGAda Distinguished Service Awards
> Thomas Panfil (United States Government) - SIGAda Distinguished Service Awards
> Jean Sammet (IBM, retired) - SIGAda Distinguished Service Awards
> Andy Wellings (University of York) - Outstanding Ada Community Contributions

LIAISON WITH ISO/IEC JTC 1/SC 22 WG9

ISO/IEC JTC1/SC22 WG9 is that body of international representatives responsible for the maintenance and evolution of the Ada International Standard. The National Bodies represented on WG9 are Canada, France, Germany, Italy, Japan, Switzerland, the United Kingdom, and the United States.

WG9 is planning to produce an Amendment to the existing Ada standard, ISO/IEC 8642:1995 in lieu of developing a major revision as was done in 1995. In 2000, the Ada International Standard was updated with a Technical Corrigendum 1 (COR.1:2000). This Technical Corrigendum provided some needed maintenance corrections to the Ada language. However, it was limited to making corrections only. Either an Amendment or a Revision is required to keep the language up to date by supporting new programming usage and paradigms. An Amendment could be written so that it incorporates noticeable changes intended to add value to the Ada community. These changes could be significant improvements intended to

stimulate interest in both the current Ada community and potential users in the software engineering community. WG9 is planning to update the Ada International Standard using the Amendment approach.

Please note that SIGAda will be playing a prominent role in the evolution of the Amendment. To achieve such a role, a formal liaison must be established between an organization such as SIGAda and WG9. Mr. James W. Moore, Chair of WG9, has invited ACM SIGAda to become a Category C Liaison with WG9. Category C liaisons are liaisons to organizations, which make an effective technical contribution and participate actively at the WG level. A formal Liaison request titled: ***Request for Establishment of Category C Liaison between SC 22/WG 9 and the Association for Computing Machinery's Special Interest Group on Ada (SIGAda)*** has been formally approved by the SIGAda Executive Committee and the ACM Executive Committee (EC). This document was published in the June 2002 Ada Letters and has been embodied in WG9 document N407. At the 21 June 2002 WG9 meeting, the request was formally approved unanimously as Resolution 42-5. It reads: ***"In accordance with 3.3.1.1 of the JTC1 Directives, ISO/IEC JTC1/SC22/WG9 confirms the Category C liaison request of ACM SIGAda contained in N407 and forwards the request to SC22 for its consideration and any actions needed to effect approval of the liaison."*** The liaison agreement has now been approved by ISO. Mr. Keith Brannon from the ISO/IEC Information Technology Task Force sent SIGAda a letter stating: *"With reference to your request to ISO/IEC JTC 1/SC 22 for the establishment of Category C liaison with SC 22/WG 9, after consulting ISO/IEC JTC1 we can confirm that Category C liaison has now been officially established between ISO/IEC 1/SC22/WG9 and your organization."* The letter is dated 5 November 2002. The text of the Liaison Agreement is published in the December 2002 issue of Ada Letters and provided via the SIGAda Home page.

The benefits to SIGAda are identified in the liaison agreement. In addition, this will also provide extra value to a SIGAda membership, in that:
- SIGAda members will be allowed to see the draft WG9 documentation for the next Ada Standard in its early stages. [This documentation has not been made available to us before.]
- SIGAda members will be allowed (collectively) to comment on the draft WG9 documentation, thus potentially impacting the standard;
- SIGAda members will have an important role in the management of Ada Application Program Interfaces (APIs); and
- SIGAda members (collectively) can play a more active role in the evolution of the Ada standard should they choose to do so.

We have already been the beneficiary of this agreement as WG9 provided valuable information on the future of Ada during the WG9 Forum at SIGAda 2002. We were all able to provide our input to proposed changes to the Ada language. We view this role to be of great value to our membership and extremely important to the Ada community.

We are extremely pleased that ISO/IEC JTC1/SC22 WG9 has honored us by requesting we become a Category C Liaison. We believe that it is a strong indication of ACM SIGAda's value to the international Ada community. We believe such a liaison will be valuable to our membership and potentially attract new members.

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New SIGAda Working Group Proposed

In conjunction with our new role as Category C Liaison with WG9, SIGAda has initiated a program to manage Ada Application Program Interfaces (APIs). Management of APIs could be an important step towards the eventual standardization of API through ISO/IEC JTC 1/SC22 WG9. At SIGAda 2002, Mr. Clyde Roby chaired a workshop to address a ***Plan for Ada Application Program Interfaces (API) Management.*** The Workshop was extremely well received with approximately one fifth of all SIGAda 2002 Conference attendees present. Valuable input was made to the plan. The intent is that Ada-Europe, SIGAda, and WG9 can work together to provide a valuable service to the Ada community for managing Ada bindings to APIs. The revised plan is significantly improved and available on line from the SIGAda Home Page for the API Working Group at http://www.acm.org/sigada/wg/apiwg/. We anticipate that a new Working Group, the APIWG, will be chartered in the near future as part of this plan.

In Cooperation With (ICW) Ada-Europe

Ada-Europe is an international organization, set up to promote the use of Ada. It aims to spread the use and the knowledge of Ada and to promote its introduction into academic and research establishments. Above all, Ada-Europe intends to represent European interests in Ada and Ada-related matters.

In its current form, Ada-Europe was established in 1988. As there is no European legal framework to govern such organizations, it was established according to Belgian Law. Currently, the member organizations are: Ada-Belgium, Ada-Denmark, Ada-Deutschland, Ada-France, Ada-Spain, Ada in Sweden, Ada in Switzerland and Ada UK. The best-known of Ada-Europe's activities is its annual conference, the International Conference on Reliable Software Technologies, which provides the European forum for researchers and users of Ada and other technologies geared towards reliable systems. For many years, SIGAda and Ada-Europe have maintained an ICW relationship with each other. This year SIGAda supported 3 Ada-Europe VIPs to our SIGAda 2002 Conference in Houston: Dr. Erhard Ploedereder, Dr. John Barnes, and Mr. Dirk Craeynest. In exchange, Ada-Europe supported 3 SIGAda VIPs to their Ada-Europe 2003 conference in Toulouse, France from 16-20 June 2003: Mr. Currie Colket, Dr. Ben Brosgol, and Mr. Jim Moore. The exchange has proven to be valuable to both organizations and the international Ada community.

Their next conference (the 9th International Conference on Reliable Software Technologies - Ada-Europe 2004) is scheduled for 14-18 June 2004 in Palma de Mallorca, Spain.

SIGAda Home Page

One of the important means of providing up-to-date accurate information to our membership is the SIGAda Home Page. Located at http://www.acm.org/sigada/, the home page has major sections on Ada Advocacy, the Ada Community, Ada Frequently Asked Questions (FAQs), Basic Ada Information, Creating Ada Software, Joining SIGAda or ACM, SIGAda Conferences, SIGAda Organizational Information, and SIGAda Working Groups. We also have approximately 25 maillists to support a variety of communication needs. In the past, most of the lists had been open subscription and open posting. We had been targeted by spammers and began a campaign to tighten up the maillists by eliminating html and other attachments, requiring editor subscriptions, blind reviews of list members, and in some cases moderated postings. This effort has significantly eliminated spam returning the functionality and value of the lists back to SIGAda. We are grateful to have a very skilled webmaster, Mr. Clyde Roby, who keeps the vast information on the SIGAda Home Page relevant to our membership.

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SIGAda Local Chapters

At one time SIGAda had 14 local chapters. Only 5 of these chapters are active: Baltimore SIGAda Chapter, San Diego SIGAda Chapter, Los Angeles SIGAda Chapter, Twin Cities SIGAda Chapter, and DC SIGAda Chapter. In general, each chapter conducts local meetings, serves as a source of local expertise in Ada, and supports the local Ada community. These local chapters have been extremely valuable to ACM SIGAda by serving as hosts for our SIGAda conferences. All local chapters are managed separately under ACM.

SIGAda Working Groups

SIGAda charters Working Groups to focus on a variety of technical interests of importance to our membership. These working groups have played a significant role in shaping the Ada standard by addressing issues that later became standardized via the ISO process. Such Working Groups include: the Ada Language Issues Working Group (ALIWG), Performance Issues Working Group (PIWG), Numeric Working Group (NUMWG), Ada Run Time Environment Working Group (ARTEWG), and Ada Semantic Interface Working Group (ASISWG). The Education Working Group (EDWG) played a significant role in educating the Ada community and addresses academic issues for each of our annual conferences. Currently the active Working Groups include ASISWG and EDWG. As noted earlier, the Ada Applications Programming Interfaces Working Group (APIWG) is forming.

Conclusion

SIGAda has served a valuable role to the international Ada community during the 1 July 2002 to 30 June 2003 time frame. It has done so through a number of important activities to include our annual conference, our quarterly newsletter, our Ada Advocacy Initiative, our liaisons with ISO/IEC JTC 1/SC 22/WG9 and Ada-Europe, our SIGAda home page, our SIGAda Working Groups, and our SIGAda Local Chapters. We are extremely fortunate to have a large number of dedicated volunteers who want to be part of the larger picture. We believe that there are ongoing requirements for languages that support industrial strength engineering solutions. The Ada language meets the requirements that it was originally designed to satisfy large-scale, long-lived, high-integrity real-time embedded applications. Ada survived the period when it was most at risk during the 1997-98 time period when the Ada Joint Program Office (AJPO) closed. Ada usage now appears to be on the rise and Ada is expanding into new domains. We believe that ACM SIGAda, Ada-Europe, the ARA, and ISO/IEC JTC 1/SC 22 WG9 are cooperative forces providing important benefits to the international Ada community.

Sincerely yours,

William Currie Colket

Currie Colket
Chair ACM SIGAda