



“Ada-WOW”

Ada's Window On the World



Crowne Plaza Redondo Beach & Marina Hotel
Redondo Beach, California, USA
1999 October 17-21

Thursday, 21 October
Volume 1, Issue 3

A Strong Finish for SIGAda'99!

by Hal Hart (TRW)
SIGAda'99 Conference Chair

John McCormick brought down the house with his keynote Tuesday featuring slides and a short movie of his model railroad lab controlled by Ada used to teach real-time programming at the University of Northern Iowa. If the effectiveness of Ada's features for real-time control (and his metrics showing students achieving 0% project completion using C and 50-80% using Ada) didn't get to you, the railroading music soundtrack on the movie did.

In the afternoon plenary session, Ian Gilchrist gave us fairly rosy results for Ada from his survey of UK industry attitudes toward Ada for high reliability systems, and Brad Balfour gave us an update on CORBA and the new mapping to Ada 95. Also in this session, SIGAda's annual awards were presented, which you will read about elsewhere in this issue.

Today the conference closes with workshop reports, my *big-name* panel on "What happened to integrated environments," and always informative Barry Boehm trying his hand at crystal-ball gazing.

I must say that, to me, the Ada-WOW experiment this week has not only been rewarding in the extent of participation and favorable feedback we've received, but it has served a very unanticipated purpose as my chronicle of reflections and impressions of *good times* that often escape with the passing of time soon after events like this end. I look forward to reading Ada-WOW with the passage of time to remind me of our success this week. I trust you have enjoyed SIGAda'99 and your time in Redondo Beach, and I hope you too will

take Ada-WOW home with you to remind you of this week and share with colleagues. -H²

PS: Please remember to fill out the conference evaluation form and turn it in at the registration desk.

Interview with Australian CSCers

by Mark Gasiorowski
(CSC Australia)

The sunny and distant land Down Under is not just beer and boomerangs, barbecues and kangaroos (well, OK, that's a big part of it) there's serious work going on down there! We don't have the size of computer industry that exists in the US, but we have a large, active workforce that believes in "doing it right" and is using the latest techniques and tools to get there. Ada has quite a presence in Australia. Most applications are defense related and this is the market specifically targeted by our division of CSC in Australia, major defense projects. Ada is used on mission critical operational software as well as tactical trainers and simulators.

There are currently 7 of us here from CSC Australia working with Litton GCS in Northridge CA.; John Latham, Laz Davila, Mark Gasiorowski, Geoff Callaway, Bill Maclain, Rachael Adams and Michael Lomax are the group here in SigAda'99. CSC Australia has approximately 2500 (world total 44,000). We hail from such out of the way places as Adelaide, Nowra, Canberra, Armidale, and Brisbane; also Sydney. Of course the real reason we're here is Disneyland, Yosemite, Los Vegas, Valley Girls, Mammoth Mountain, Lake Tahoe, factory outlets, San Francisco, and last but not least, the Fry's catalogs!

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Weather Forecast

Today (Sunny)

High: 31 C (87 F)

Low: 16 C (61 F)

Tomorrow (Sunny)

High: 25 C (83 F)

Low: 14 C (58 F)

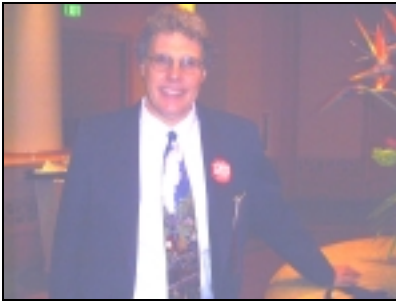
(In other words, "glorious" all week as Hal has been promising for 12 months)

Highlights of the Keynote Address: Ada, Model Railroad, and Real-Time Software Engineering Education

By Chris Sparks

Today's plenary session, presented by John McCormick (University of Northern Iowa), was an interesting real-life experience involving Ada and railroad-

ing. No, Johnny Cash has nothing to do with this article! ☺ With that said, I found today's plenary session both entertaining and informative.



Railroad Magnate?
(see the train & smoke on tie?)

This discussion focused on the observation that university curricula has not made real-time embedded studies popular. This area of study is one of Mr. McCormick's field of interest. He alluded to the fact that most of us live with embedded technologies and it has pretty much embraced our lifestyles. To speculate why there is a lack of interest may come from the fact that these items work and we take these technologies for granted. How many of us could live with a phone? I know I couldn't.

This brings us the meat of Mr. McCormick's discussion in that he chose to design a course, CSC 416 (Real-Time Systems), at Plattsburgh, NY to get an interest from his students and his colleagues. In the beginning he had problems with a lack of equipment. He did, however, managed to make a laboratory setup using an HO train set, magnets, radio control boards and a computer. His students were able to demonstrate the ability to have two trains simultaneously operate on the same track. He showed the audience pictures and a video of the success of his students. In my opinion Mr. McCormick proved to his students that embedded programming can be fun and rewarding.

On the flip side, I found his statistical data quite informative. He showed charts plotting student completions of projects using Ada and C. His testing samples were both equivalent with only the language being different. His data seems to indicate that "Ada does succeeds where C fails" The data he showed us indicated that none of his

"C" students finished their projects over quite a few years. On the Ada side 80% of his students passed their projects. With the "C" students, Mr. McCormick kept giving more code to them in an attempt to help them finish their projects. With the Ada students he didn't have to give these students that much.

Mr. McCormick became a staunch enthusiast of Ada and quite a respected and well known asset to our Ada community.

GNAT Update

From: Robert Dewar dewar@gnat.com

Subject: Announcing GNAT version 3.12p for Linux and Sparc Solaris
Date: Tue, 19 Oct 1999 17:36:51 GMT

Newsgroups: comp.lang.ada

A new public release of GNAT version 3.12p, is now available at

<ftp://cs.nyu.edu/pub/gnat>

for GNU/Linux and Sparc Solaris. Other versions to follow very shortly, as well as RPM's for Linux (from the GNAT/Linux group).

This release coincides with the opening day of Sig Ada :-)

Robert B. K. Dewar
Ada Core Technologies

Invited Presentation: The Current State of CORBA

By David F. Harrison
(NCI Information Systems, Inc.)

In the last hour of Wednesday afternoon's Plenary Session, Brad Balfour, of Objective Interface Systems, presented an invited talk on the current state of CORBA, the Common Object Request Brokering Architecture. In a lively and interactive session, Brad covered recent changes and trends in CORBA standards, including versions 2.2, 2.3, and 3.0. These first two versions are currently out, with the latter (3.0) yet to come - eventually.

- The first part of the talk centered on core revisions in 2.3; specifically, on the following:
- Objects by value (reflecting the influence of Java)

- Bi-directional, General Inter-ORB Protocol (GIOP)
- Policies related to Asynchronous Messaging.

(Note that CORBA Messaging is a separate Standard)



Brad and CORBA

Brad noted that the forth-coming version 3.0 was, in fact, three specifications, covering:

1. Java & Internet Integration
2. Quality of Service (QOS) controls
3. a CORBA Components Package.

In the area of Real Time Improvements, he discussed

- Predictable end-to-end operations
- Predictable Transport
- Deterministic QOS metrics

A Minimal CORBA suggested for inclusion in Version 3.0 is not truly minimal, as it omits standards for DII, DSI, Dynamic any, Interface Repository, and Subject POA & policies.

Continuing with the second part of his presentation, Brad discussed updates to IDL-Ada95 mappings, noting that these must evolve as CORBA standards evolve, but that new additions require no additional mapping. All updates are public, and questions are invited. Contact the OMG Ada Revision Task Force Chair, Vic Giddings.

SUMMARY OF CHANGES

(August, 1998)

- added mapping rules
- POA added
- Changes consistent with v. 2.3

(March, 1998) (minimal)

(November, 1998) (in process)

- helper packages
- objects by value

- Escaped identifiers
- Add-ins & changes to pseudo-interfaces
- Delegating servants

Following a few brief mentions of CORBA programs in which OIS is involved, Brad concluded his talk, and took questions from the floor.

What British SW-Engineers really think about Ada

Karlotto Mangold (ATM)
SIGAda International
Representative

Ian Gilchrist (IPL, Bath UK) gave a presentation about a survey done this spring on behalf of Ada UK among British SW-engineers to learn their "attitude to Ada". Forty one members of the "High Integrity SW community", representing most of the major contractors, were interviewed to find out their experiences with and their position to the future use of Ada.

The interviewed sample represents about 350 person-years of Ada experience. Based on this knowledge they scored on a 1 (bad) to 5 (good) ranking the following properties:

- Ada environment worked as advertised 3.6
- Ada is easy to learn (with the restriction real-time is hard) 3.4
- Ada contributed to the success 3.6
- Ada blamed for failure 1.7

Despite this really positive experiences from the past and the fact that nearly all (39 out of 41) of them believed that they have a choice for future projects, they see C, C++ or Java as alternative languages.

Surprisingly, more than one third of them (15) will choose another language due to the cost of the development environment and another 20 % will change the implementation language due to the lack of support tools.

I am very much surprised by the fact that - according to comments from the completed questionnaires, published in

the annex of the proceedings – even experienced Ada users will prefer another language with respect of the costs. I would like to know, whether the cheap CD-ROMs, offered by Walnut Creek and the possibility to down-load software from the Internet are not known in the UK.

My personal conclusion from this survey is, that decisions are mainly not made by reasoning but by going mainstream, as millions of flies can't be wrong. Unfortunately this perspective will not help Ada to come out of its niche market, even if, after the next series of projects, it should turn out, that the programming languages used then, might not be ranked as high as Ada was in this survey.

Highlights of Tutorial: "SW-CMM Version 2 – The New Capability Maturity Models & CMM-Integration Initiative Status",

by Michael Tonndorf
(CSC PLOENZKE)

The Capability Maturity Model (CMM) is a reference model of mature practices in a specified discipline, used to assess a group's capability to perform that discipline. That's what the definition says. In effect the CMM is playing an ever increasing role in the area of software and systems engineering. This is expressed e.g. in the 1997 cancellation of the Ada mandate, where at the same time the focus moved to a disciplined software process.

After the first SEI publication of the CMM more than 40 different CMMs in a variety of disciplines have emerged. So it was time to *unify* the models and to design an even more mature CMM based on the variety of experiences. Another goal of this initiative is to provide a framework enabling the user to derive a specific CMM without having to invent a full new model. In addition consistency with ISO 15504, the international standard for assessments, shall be established. So CMMI is on the way

of adopting the idea of *tailoring* in the same way as it was introduced with SW standards before.

The goal of the tutorial presented by Rick Hefner, (TRW) was to give an overview of this CMM integration project (sponsored by the DoD) and to point to the new ideas and features underway. Hefner pointed out that at the end there will be a CMMI product suite replacing the SW-CMM version 1.1 and the EIA 731 Systems Engineering Standard. The CMMI framework will then comprise

- a framework general,
- a process management core,
- an integration core environment,
- generic discipline areas,
- output models.

The new dimension of a *continuous* representation seems to be one of the highlights of the new model. Whereas the original CMM defined five *maturity levels* in a *staged* representation the CMMI allows to model goals and key practices more in a more flexible, but also in a more complex way.

The rest of the tutorial was used to present and discuss the CMMI common features, goals, practices and process areas at the five model levels. The changes from SW-CMM v1.1 to CMMI were summarized. Until November 30, 1999, comments on this draft CMMI are requested by the project team. CMMI can only be successful if it really reflects current experiences and industry's best practices. Surely we are facing then a certain transition phase from CMM v.11 to CMMI, expected are at least two years.

For me the tutorial was an excellent starting point to get more familiar with CMMI, however a full understanding can only be achieved by looking at the full document, available on the SEI web server. Complementing the many technical contributions this tutorial surely was of great value for all who are interested in project, process, and quality management issues.

Attendees Give Thoughts about SIGAda'99

By Steven Doran
(Litton Guidance & Control Systems)

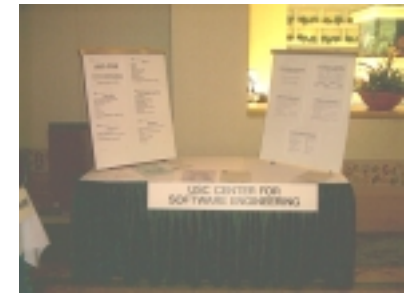
Unfortunately, SigAda '99 is coming to an end. All of the attendee's I interviewed thoroughly enjoyed the conference. One of the most favorite elements of the conference everyone liked was the location. Even though some were concerned about the recent earthquake and wondered if the conference was going to conclude in the pacific ocean, many took advantage of the local attractions. Hollywood Studio's, The Getty Center and Hard Rock Café were the preferred places to visit. A popular thing to do with attendee's was to watch the sunset. One attendee wishes SIGAda will be at Redondo Beach every year. I also heard good comments about the tutorials. Many felt the subject matter of the tutorials could be applied to their projects. Everyone was impressed by John McCormick's presentation that included music synced to a video of the model train being controlled by Ada. I also heard favorable comments about ACT's Gala *Lady Ada's Greatest Hits*. ACT is almost starting a tradition of presenting a Gala every SIGAda and many hope the tradition continues next year. Some other favorable comments I heard included the workshops and paper presentations. One question I asked all the attendee's I interviewed was "Did you learn anything new from SIGAda '99?" A majority of the responses were "Yes." If you feel sad or depressed that SIGAda '99 is coming to an end, cheer-up! SIGAda 2000 is only one year away.



Roger Mills (LA ACM, TRW retired) and Carol Mann (RSL) became familiar faces in the registration area

Some Views from the Exhibition

(continued from Issue 2)



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