



## 6th International Conference on Reliable Software Technologies Ada-Europe '2001



Leuven, Belgium, May 14-18, 2001



<http://www.ada-europe.org/conference2001.html>





		Exhibition	Tutorial	Workshop	Conference	Evening event
Monday	14 <sup>th</sup> May		o	o		Welcome reception
Tuesday	15 <sup>th</sup> May	o			o	Civic reception at town hall with guided tour
Wednesday	16 <sup>th</sup> May	o			o	Banquet at Faculty Club in Groot Begijnhof
Thursday	17 <sup>th</sup> May	o			o	Visit to Stella Artois brewery
Friday	18 <sup>th</sup> May		o			

## Workshop on Exception Handling for a 21st Century Programming Language

As the complexity of modern software systems grows, so does the need to deal reliably and efficiently with an increasing number of abnormal situations. The most general mechanism for this is exception handling, which is becoming a standard feature in modern languages.

A general exception handling mechanism should be well integrated with the other features of a language and conform to its programming paradigms. Increasing evidence from researchers and practitioners indicates that the exception handling in Ada 95 does not adequately reflect the whole range of programming paradigms supported by the language. In particular, the exception handling model remains based on Ada 83 while Ada 95 is object oriented. Furthermore, exceptions and concurrency are, arguably, not well integrated. A task with an unhandled exception dies silently, and one has to resort to asynchronous transfer of control for passing exceptions asynchronously between tasks. It is not clear that this solution extends well into a distributed environment. Yet another problem is the existence of anonymous exceptions.

New fault tolerance schemes based on existing exception handling facilities have been developed in research environments. This is important as it allows higher level abstractions providing more advanced mechanisms to be introduced without impacting the language definition.

### The aims of the workshop are:

- to share experience on how to build modern systems that have to deal with abnormal situations
- to discuss how solutions to those needs can be developed employing standard Ada features including the current exception handling paradigm
- to propose new exception handling mechanisms / paradigms that can be included in future revisions of the Ada language and also fit high integrity language profiles for safety critical systems.

### Participation

Participation to the workshop is limited to 25-35 individuals and is by invitation upon acceptance of a submission. All types of submissions are welcome: brief position papers, experience reports, full research papers, etc.

All papers will be made available to workshop participants before the workshop. The workshop will include talks based on the submitted papers and intensive shepherded discussion sessions. The submissions and a workshop summary will be published in Ada Letters.

### Submissions

Submissions should be sent electronically (preferable in ps or pdf format) to Alexander Romanovsky: alexander.romanovsky@ncl.ac.uk

Electronic submission: January 31, 2001

Notification: March 15, 2001

Revised versions of papers: April 15, 2001

### Workshop co-chairs:

Alexander Romanovsky (U. of Newcastle)  
Alfred Strohmeier (EPFL)  
Andy Wellings (U. of York)

### Workshop Program Committee:

Bill Bail (MITRE)  
Jörg Kienzie (EPFL)  
Pat Rogers (Software Arts and Sciences)  
Bo Sanden (Colorado Technical U.)  
Anand Tripathi (U. of Minnesota)  
Tullio Vardanega (ESA)  
Thomas Wolf (Paranor)



# Invited Speakers

## Logic versus Magic in Critical Systems

### Peter Amey, Praxis Critical Systems

A prevailing trend in software engineering is the use of tools which apparently simplify the problem to be solved. Often, however, this results in complexity being concealed or "magicked away".

For the most critical of systems, where a credible case for safety and integrity must be made prior to there being any service experience, we cannot tolerate concealed complexity and must be able to reason logically about the behaviour of the system.

The presentation draws to on real life project experience to identify some historical and current magics and their effect on high integrity software development; this is contrasted with the cost and quality benefits that can be made from taking a more logical and disciplined approach.

Peter Amey is an aeronautical engineer by original professional training. He was a serving engineering officer in the Royal Air Force where he spent several years at the Boscombe Down test establishment working on the certification of aircraft armament systems. Peter joined Program Validation Ltd to develop SPARK and th SPARK Examiner and continues that work with Praxis Critical Systems. As well as developing SPARK he has used it on the Tornado, Eurofighter and Lockheed C130J programmes.

## Formal specification: a roadmap (working title)

### Axel van Lamsweerde, UCL (University of Louvain-la-Neuve)

*details to follow*

## Can Java meet its real-time deadlines?

### Brian Dobbing, Aonix Europe Ltd.

Ada has been-there, done-that as regards meeting real-time programming requirements. The Ada95 revision addressed almost all the concerns that had plagued Ada83's usability. But Java is now the flavor of the month for just about everything it seems.

Current Java semantics for all things concurrent are much inferior to even the generally rejected Ada83 tasking model, and so two on-going competing initiatives to fix Java concurrency are in progress. Both attempt to make Java suitable for real-time by addressing predictability, performance, footprint and missing features.

But how successful are these attempts, and will they achieve the goal of producing highly reliable and trusted Java-based software?

Brian Dobbing is Chief Technical Consultant at Aonix Europe and has been involved in the production of Ada development tools and runtime systems for almost 20 years. He was a member of ISO WG9 during the Ada95 revision process and spearheaded the definition of the Ravenscar Profile. Brian is also technical editor of the J Consortium working group that is defining ISO standard extensions to the Java platform for high integrity systems.

## Testing from formal specifications : a generic approach

### Marie-Claude Gaudel, Université de Paris-Sud

*details to follow*

# Other program details

## Tutorials

There will be parallel half- and full-day tutorials on Monday and Friday.

A good number of tutorials has been proposed; these are currently under review and the program should be ready in December.

## Papers

There will be paper and vendor presentations on Monday, Tuesday and Wednesday; with some parallel sessions.

More papers have been submitted than during the last few years. The review process underway now and the program should be drawn up in December.

For the latest details, please consult the web site: <http://www.ada-europe.org/conference2001.html>



## Exhibiting

- Present your products to a world-wide audience at one of the major European Conferences in the field.
- Engage in discussions with leading researchers.
- Get access to state-of-the art research results.
- Build contacts for future interactions/consulting.
- Make a presentation at a full Conference session.
- Gain visibility, as the Ada-Europe'2001 web page will link to your website.

Exhibition space will be provided at the Maria Theresia College in the room where the coffee breaks will be held. The exhibition and a summary of the exhibits will be publicised in handouts, conference schedule, and conference program. Announcements will be made in the course of technical presentations.

Exhibitors will get:

- A stand in the coffee break area of the conference
- A free conference registration for one person.
- A presentation of about 20 minutes at a regular track conference session.
- A link to your company home page or to a conference specific web page from the Ada-Europe 2001 web page.

*see web site for more details*

<http://www.ada-europe.org/conference2001.html>

## Sponsoring

A sliding scale of sponsorship provides a range of benefits. All levels include display of your logo on the conference web site and in the program. The lowest level of support is very affordable!

Local sponsors enjoy

- exposure to an international audience;
- visibility of their support for local initiatives;
- visibility of their support for the local software industry and university.

Industry sponsors

- show visible commitment; saying that they are active and will remain active in this field.
- show commitment to Software Quality by publicly supporting a conference focussing on techniques for making good software.
- are seen helping with a major event in their community.

*see web site for more details*

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### Conference Chair

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