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Preface

Ada is now ten years old, though this is the twelfth of the Ada-Europe conferences, and dozens of years are generally considered to be special moments. It is the great pleasure of Ada-France to organise the conference again, after 1984. That was the first that could tell of real programs written and compiled in the one-year-old language, and this is now almost the last before the new standard. But, of course, this is still a future issue

I feel a need to apologise about the French name "Ada sans frontières". The board debated for some time about our initial proposition, which included of course the starting idea of unlimitedness, but the final name was proposed by English members. Apart from the acknowledgement of various French contributions, we hope that these French words, the only ones in the book, can become the symbol of more and more opening, novelty, and Europe-wide attendance to Ada.

We did not receive as many propositions as we could have hoped for, but the programme committee could find contributions of very high quality and interest. I may say that every paper has been refereed by three to five people, and that a fair and relevant choice could be made, leading to a well balanced conference, where every day has a well identified main topic.

May I emphasise on the second paper? This company built a one-million-line set of software products that could be ported on many machines running under many operating systems, and compiled by many compilers. As far as I know, the symbol of all the trouble they have gone to is that some systems use normal slashes and others use backslashes to separate directory names. It might be a side effect of an especially high capability in the company, but I prefer to view it as a direct effect of the qualities of Ada.

As the reader may suppose, many papers relate to Ada 9X, the new standard that the community is close to achieving after a world-wide consultation and debate about requirements, specifications, and now detailed definition. Management, real-time, and compiler validation are focused on.

It was of course bound to happen that a part of the conference includes object-orientation, but it is not the entire subject of this second part, where various issues are studied, all related to the general structures of the language, from exceptions to a certain use of genericity and heterogeneous data, from efficiency to formal requirements and CASEs, and, last, but not least, to a comparison with a competitor language.

The third part relates to real-time, past with performance measurement, present with certification and applications, and future with the ExTRA project and 9X. In particular, is Ada really suitable for real-time applications? It is of course an old question, but answers can still be refined.

It is not easy not to forget anybody in an acknowledgement, and I prefer to do it in a general way. Many people contributed to the refereeing process, which converged to a programme committee with Lars Asplund (Uppsala University, Sweden), John Barnes (consultant, Ada-Europe president, U.K.), Jan van Katwijk (Delft University, The Netherlands), Anton Leere (Defence Research Institute, Norway), Jean-Pierre Rosen (consultant, Ada-France president, France), and of course myself (Limoges University, France). All these people contributed greatly to building this conference, and I owe many thanks to them.

My university indirectly took part in preparing this conference through photocopies, faxes, and acceptance of the many days that I spent chairing the programme committee, and not doing my ordinary task.

Corinne Sweeney had the tedious final task of implementing the last details, like numbering the pages and building the table of contents. Have a kind thought for her.

April 1993

Michel Gauthier
Programme chairman
Ada-France vice chairman

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Progress of Ada as an International Standard: ISO/IEC JTC1/SC22 WG9 Ada Status

by

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Abstract. Ada has been a standard for more than ten years and is now in the midst of an extensive review and revision leading to a revised standard in the near future. This is but one of many Ada-related projects within the international standards working group. This paper summarizes the progress and status of various international Ada-related standards including Ada9X, character sets, numerics, graphics, information systems, SQL, POSIX, and real-time systems.

General Background

Ada was initially developed as a US Department of Defense military standard MIL-STD-1815 (approved December 10, 1980) as the result of a well-known design competition. [ASR] It was then revised (MIL-STD-1815A approved January 22, 1983) and became an American National Standards Institute (ANSI) standard (ANSI/MIL-STD-1815A-1983, approved March 17, 1983) through the canvass process. AFNOR (Association Française de Normalisation) produced a French language version (with the cooperation of native French speakers from France, Belgium, Switzerland, Canada, and the United States) which became AFNOR NF Z 65-700 (*Traitement de l'information, Langages de programmation - Ada*, approved September 20, 1987). Ada became international standard ISO 8652:1987 on March 12, 1987, as a reference to the American and French standards.

Continuing work on the standardization of the Ada programming language and related standards is the responsibility of a working group under the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) known as ISO/IEC JTC1/SC22 WG9. In 1984, Technical Committee 97 on information processing formed WG14 under its SubCommittee 5 on programming languages. ISO/TC97/SC5/WG14 was thus the first designation of the working group now known as WG9. This working group was formed to control the standard from an ISO perspective. In 1987, the decision of ISO and IEC to work together on standards in the information technology area (under JTC1, Joint Technical Committee 1) and a reorganization that put programming languages in SC22 resulted in the new designation. The full title of a programming language standard contains the names of