

Preface

Michael González Harbour

Over the last decade, the International Real-Time Ada Workshops have provided a focus for identifying problems with the use of the Ada language in real-time applications, proposing solutions for those problems, evaluating proposed language changes, and sharing experiences in using Ada in industrial applications. The goals of the 10th IRTAW were to:

- Examine and develop paradigms for using Ada 95 for real-time single processor, multiprocess and distributed systems (including issues of hard and flexible scheduling).
- Consider reports on experiences with using Ada 95 on actual real-time projects.
- Identify the benefits and impacts of using object-oriented programming in multi tasking (potentially distributed) real-time systems.
- Explore the use of Ada 95 in developing multi-tasking components which are resilient to software design errors and hardware failures.
- Identify techniques whereby Ada may be used to support real-time capabilities in applications comprising components developed in other languages (e.g., Java).
- Develop criteria for the use of Ada 95 in safety critical systems.
- Understand the important aspects of implementing Ada 95 run-time support systems for the Safety Critical Systems, Systems Programming, Real-Time and Distributed Systems Annexes.
- Discuss proposals for future amendments to the Ada language that could help in better supporting the development of real-time applications in Ada.

The Workshop took place in the magnificent Castle of Magalia, which is a medieval castle that had recently been converted into a conference centre. The Castle is located in a small village called *Las Navas del Marqués*, which is in the province of *Ávila*, in Spain, in the mountains surrounding Madrid.

A number of position papers were received, and from these and other recommendations, 26 people were invited to the Workshop.

The workshop was split into sessions on specific topics and, as has been traditional, papers were not presented. Instead, the participants had read all the papers before they arrived at the Workshop, so that all the time could be devoted to the lively discussions on each of the different topics. The sessions of the Workshop were:

- *Status and Future of the Ravenscar Profile*: The experience that had been obtained from using and implementing the Ravenscar profile was reviewed, and proposals to consolidate the profile, and investigate possible extensions or changes were discussed.
- *Tasking and Object Orientation*. The goal was to identify the required language changes and their impact for fully using object-oriented programming in multi tasking real-time systems.
- *Distribution and Real-Time*. The integration of the Real-Time and Distributed Systems Annexes, was discussed, setting the base for the creation of a real-time distributed systems annex.
- *New scheduling/dispatching policies*. New scheduling policies were identified that could be added to the existing scheduling policy in the Real-Time Systems Annex to better support the needs of real-time applications.
- *Analysis of the J-Consortium Real-Time Java Proposal and Analysis of the Real-Time for Java Expert Group Proposal*. The goals of these sessions were to identify areas in which the experience with real-time Ada might influence these Real-Time Java proposals, and review how Ada needs to interact with the emerging Java technology.

Each of the themes of the different sessions led to lively discussions. Summaries of each session were produced by the rapporteurs, and they are included in these proceedings, as are the accepted position papers.

All Workshop participants as well as readers of these proceedings and all interested people are encouraged to continue working on the issues that were identified in the Workshop as requiring further work, and submit their work to the next Workshop to be held in the Spring of 2002, in the Montreal area, Canada.