Table of Contents

Invited Papers

Benefits and Problems of Formal Methods .......................... 1
Martin Gogolla

On the Role of Conceptual Schemas in Information Systems Development 16
Antoni Olivé

An Overview of Middleware ........................................ 35
Steve Vinoski

Static Analysis

Static Deadlock Detection in the Linux Kernel .................... 52
Peter T. Breuer, Marisol García Valls

Extracting Ada 95 Objects from Legacy Ada Programs ............ 65
Ricky E. Sward

On the Tree Width of Ada Programs ................................. 78
Bernd Burgstaller, Johann Blieberger, Bernhard Scholz

Distributed Systems

The Chance for Ada to Support Distribution and Real-Time in
Embedded Systems..................................................... 91
Juan López Campos, J. Javier Gutiérrez, Michael González Harbour

PolyORB: A Schizophrenic Middleware to Build Versatile Reliable
Distributed Applications ............................................ 106
Thomas Vergnaud, Jérôme Hugues, Laurent Pautet, Fabrice Kordon

Event Language for Real-Time On-the-Fly Control According to the
Initial Requirements .................................................. 120
Stepan P. Nadrchal

Real-Time Systems

Implementing Execution-Time Clocks for the Ada Ravenscar Profile .... 132
Juan Zamorano, Alejandro Alonso, José Antonio Pulido,
Juan Antonio de la Puente
Extending the Capabilities of Real-Time Applications by Combining MaRTE-OS and Linux
Miguel Masmano, Jorge Real, Ismael Ripoll, Alfons Crespo

Supporting Deadlines and EDF Scheduling in Ada
Alan Burns, Andy J. Wellings, S. Tucker Taft

Reflection and XML

OpenAda: Compile-Time Reflection for Ada 95
Patrick Rogers, Andy J. Wellings

XML4Ada95 Accessing XML Using the DOM in Ada95
Zdenko Vrandečić, Daniel Simon

Testing

A Randomised Test Approach to Testing Safety Critical Ada Code
Sukant K. Giri, Atit Mishra, Yogananda V. Jeppu, Kundapur Karunakar

Good Random Testing
Kwok Ping Chan, Tsong Yueh Chen, Dave Towey

Teaching Real-Time Systems Around a Digital Model Railroad
Platform Using Ada
Bárbara Álvarez, Juan A. Pastor, Francisco Ortiz, Pedro Sánchez, Pedro Navarro

Critical Systems Modeling

High Integrity Ada in a UML and C World
Peter Amey, Neil White

Ada Meets Giotto
Helge Hagenauer, Norbert Martinek, Werner Pohlmann

High-Integrity Interfacing to Programmable Logic with Ada
Adrian J. Hilton, Jon G. Hall

Scheduling

Dynamic Ceiling Priorities: A Proposal for Ada0Y
Jorge Real, Alan Burns, Javier Miranda, Edmond Schonberg, Alfons Crespo

Mixing Scheduling Policies in Ada
Agustín Espinosa Minguet, Ana García-Fornes, Vicente Lorente Garcés, Andrés Terrasa Barrena
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementing an Application-Defined Scheduling Framework for Ada Tasking</td>
<td>283</td>
</tr>
<tr>
<td>Mario Aldea, Javier Miranda, Michael González Harbour</td>
<td></td>
</tr>
<tr>
<td>Application Programming Interfaces</td>
<td></td>
</tr>
<tr>
<td>A Theory of Persistent Containers and Its Application to Ada</td>
<td>297</td>
</tr>
<tr>
<td>Mário Amado Alves</td>
<td></td>
</tr>
<tr>
<td>Shortcuts: A Critical Look</td>
<td>309</td>
</tr>
<tr>
<td>Matthew Heaney</td>
<td></td>
</tr>
<tr>
<td>Vector Processing in Ada</td>
<td>321</td>
</tr>
<tr>
<td>Franco Gasperoni</td>
<td></td>
</tr>
<tr>
<td>Author Index</td>
<td>333</td>
</tr>
</tbody>
</table>