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COTS-Based Software Systems

4th International Conference, ICCBSS 2005
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Proceedings



Springer

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Foreword

The theme “Build and Conquer” chosen for this year’s conference fully represents what we (the organizers) want to put across to the software community: software development is an engineering discipline, and not an artistic expression. Once we are ready to “build” our software systems using pieces previously built in (similar to any other technology manufacturer), we will be able to “conquer” the software engineering process. If we take a look at other engineering disciplines such as car manufacturing, house appliances or aeronautics, we see that the final products are built through the integration of multiprovider commercial components. These components are successfully integrated and constitute an important part of the final product. Most software-related organizations still build software from scratch, omitting thousands of ready-built commercially available software components that could be used very effectively during the development phase.

This year ICCBSS moves to Europe for the first time since the first conference took place in Orlando, FL, USA in 2002. The conference scope has enlarged over the years to include the Open Source community and Web Services technologies. The reason for this is that I believe both are considered components-off-the-shelf, so many of the characteristics of COTS are also applied to Open Source and Web Services. Due to this, we will enjoy the presence of keynote speakers and researchers presenting on these two topics for the first time.

The conference program is divided into three different tracks comprising research and experience presentations, panels of discussion with renowned experts, tutorials in which to expand the knowledge of the field, poster presentations, and keynote presentations. The conference is preceded by two additional workshops, in which attendees may interact with COTS experts face-to-face to solve certain COTS-related issues. Moreover, due to the fact that this is the first time to host the conference in Europe, there is an introductory course on “Building Software Systems with Commercial Components (COTS)” for those who are new to this area.

Last but not least, I would like to express my thanks to all the members of the ICCBSS 2005 Planning Committee for volunteering their time to make the fourth conference a reality. I would also like to thank the Program Committee for their excellent work in reviewing and selecting the papers that will be presented here.

Again, welcome to the proceedings of ICCBSS 2005, and I hope you find this conference interesting for your own needs, and you find the solutions needed to “conquer” your software systems.

Preface

On behalf of the ICCBSS 2005 Planning and Program Committees, we would like to welcome you to the proceedings of this year's conference, the fourth in the series. All of the previous ICCBSS conferences indicated a growing interest in the issues of COTS, and this year's conference continues this trend: the number and excellence of the papers we received for this year's conference attest to the continuing interest throughout the world in the use of commercial software in almost every domain.

Our original hope for this year's conference was to emphasize those issues that mark the growing maturity of COTS in the world: consolidating the COTS market, dealing with the many legal issues, and finding and publicizing COTS success stories. While not all of the papers in the conference are reflections of these goals, there are many that do. We believe that at least some of the impetus for this growing maturity about COTS issues is a reflection of the hard work and perseverance that has marked the three previous ICCBSS conferences.

This year's conference is the first to be held in Europe, and the papers that will be presented reflect this fact. They represent a very broad, multinational community that spans the globe, and it can truly be said that ICCBSS is an international conference.

We would especially like to thank the members of the Program Committee and the referees for their great contribution of time, talent, and wisdom in choosing the papers you will hear. We would also like to thank our hosts, the members of the European Software Institute, for their generous work in organizing the conference. We look forward to a truly memorable conference in Bilbao.

David Carney
Jean-Christophe Mielnik

Conference Organizers



The European Software Institute (ESI) has now established itself as one of the world's major centers for software process improvement. Our strength lies in our close partnership with industry. ESI's business-driven approach focuses on issues that result in a genuine commercial impact, such as reduction of costs and improving productivity.

The European Software Institute's technical work is driven by the philosophy of bringing measurable business improvements in the management and development of software-intensive systems for both individual companies and the software-related industry as a whole. In partnership with its patrons, ESI identifies relevant emerging process-improvement technologies. We then mature these methodologies through research, trials and close collaboration with business. Finally, we help companies to adapt the methodologies to their own organization or industry.

Within this overall framework, ESI's work is divided into four key technology areas: software process improvement, measurement, system engineering, and product-line based reuse where COTS research is allocated.

Learn more about the ESI at <http://www.esi.es>



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The Software Engineering Institute (SEI) provides leadership in advancing the state of software engineering practice. We collaborate with industry, academia, and the government to learn about the best technical and management practices and then use what we learn to benefit the software engineering community.

The SEI program of work consists of initiatives grouped into three areas of software engineering: technical practices (especially product engineering principles and methods), management practices, and independent research and development (IRAD) activities. The COTS-Based Systems Initiative is grouped with other technical practice initiatives like Performance Critical Systems, Product Line Practice, Architecture Tradeoff Analysis, and Survivable Systems.

The institute is based at Carnegie Mellon University and is sponsored by the US Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics [OUSD (AT&L)].

Learn more about the SEI at <http://www.sei.cmu.edu>



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Learn more about the NRC at <http://www.nrc-cnrc.gc.ca/>.

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Keynote Speakers

Mr. John Kemp
Technical Architect
Web Services Technologies, Nokia

Mobile Web Services – Bridging Fixed and Mobile Networks with COTS Software

The traditional fixed Internet has offered a wide variety of services and content to the general Web-browsing public. The mobile network has been seen quite differently, offering several challenges to the provision of Internet-based software and services. Web services technologies aim to overcome these challenges, and provide a world of new and exciting software-based services to mobile users. How will COTS software support mobile Web services, and what are some of the issues in bringing Web services support to COTS software?

Prof. Patrice Degoulet
Head of Medical Informatics
Pompidou Hospital

Building a COTS-Based Hospital Medical System

Pompidou Hospital is one of the first hospitals to implement an EPR (Electronic Patient Record). This is a not-too-old medical ideal where everyday operations and record-keeping are carried out and maintained almost exclusively with computers. The idea behind it is to make all patients' medical reports, lab results, and images electronically available to clinicians, instantaneously, wherever they are and using only a laptop. Patrice Degoulet chose a commercial solution, a collection of the most effective COTS already existing in the market, in constructing the entire Pompidou's Medical System. He will present how the new system was designed and how the integration was carried out with so many different commercial components from different COTS vendors.

Mr. Tom Glover
President and Chairman of the Web Services Interoperability Organization (WSI)
Senior Program Manager – Web Services Standards at IBM

Evolving COTS and GOTS Software into the 21st Century

Throughout the world today the drive towards ubiquitous interoperability has become a critical step towards meeting the need for flexible configuration of software solutions. Web services has emerged as the standards-based component model with the potential to deliver this broad interoperability, and the Services-Oriented Architecture model is hailed as the architecture within which these services will be deployed. We'll look at the synergies between these emerging technologies and the "off-the-shelf software" movement and discuss the synergies between the two initiatives which, if exploited, may empower new software users.



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