

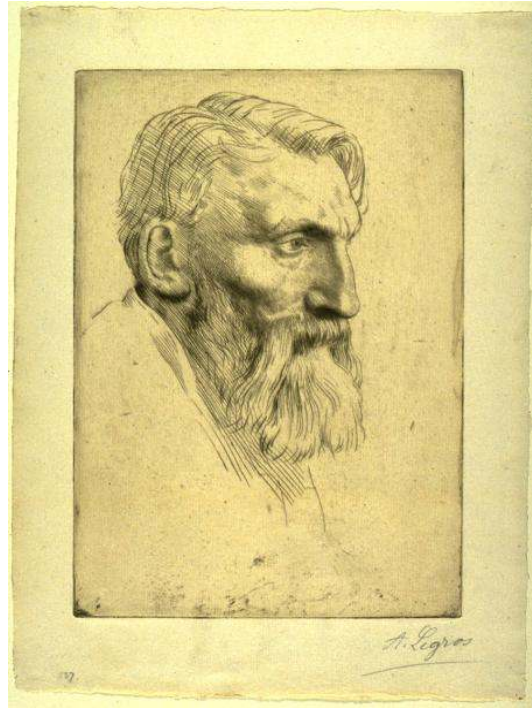
D32 Dissemination and exploitation report (Year 3)



Project IST-511599

RODIN

“Rigorous Open Development Environment for Complex Systems”



RODIN Deliverable D32

Dissemination and exploitation report

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<http://rodin.cs.ncl.ac.uk/>

Contributors:

Alexander Romanovsky (University of Newcastle)
Michael Butler (University of Southampton)
Laurent Voisin (ETH Zurich)

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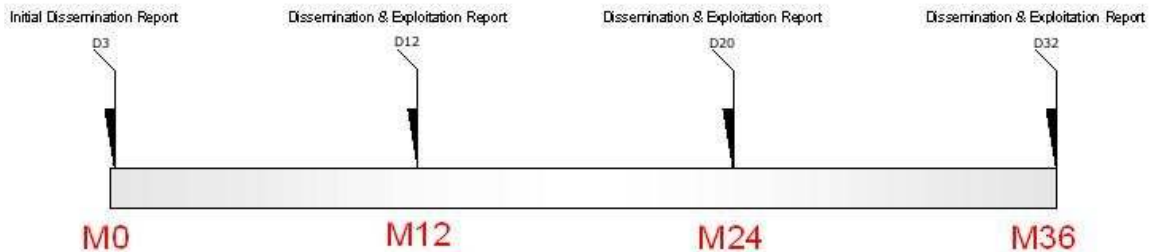
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1 Introduction

This document aims at exposing the progress made in the RODIN project concerning the dissemination and exploitation of existing results and the raising of public awareness and participation. This document complements:

- *D3 Initial dissemination report*,
- *D12 Dissemination and exploitation report year 1* and
- *D20 Dissemination and exploitation report year 2*.

It contains only new information, unless clearly stated.



2 Dissemination and exploitation

This section presents our dissemination and exploitation strategy (unchanged since D12), action items undertaken or to be undertaken in order to achieve our objective, and the status of the dissemination/exploitation activities.

2.1 Strategy (unchanged)

Our objective is to obtain a tested, open platform, fit for use by industry for the development of fault-tolerant systems. This platform should fulfil the “three U rule”, ie *Useful, Usable, Used*. To verify this rule, we consider that the following assertions should hold:

- [A1] The platform has successfully analysed the 5 case-studies of the project. Positive feedback has been collected among project partners.
- [A2] Positive feedback has been collected among IIG members. Some of them have provided plug-in specification and/or complementary case-study, have initiated assessment project, and/or have started to use/contribute to the platform.
- [A3] Positive feedback has been collected from academic world. The platform is explicitly supported by several universities outside the consortium. They will provide for example
 - tested and packaged releases of the platform in an easy-to-install form;
 - documentation and examples of use for the platform and selected plug-ins;
 - Creation of basic plug-ins for client tools.

- A pool of developers has been set up and contributes to the platform.
- [A4] Some dedicated plug-ins are commercially available and have been sold/are about to be sold to companies.

[A1], [A2] and [A3] are the criteria for assessing the technical interest of the platform. If [A1] is part of WP1, [A2] and [A3] require a specific dissemination policy in order to enlarge the community around the platform as much as possible, and to ensure technical support from the open-source world.

[A4] is the main criterion for building a realistic business plan and envisaging a commercial future for the platform. These criterions would only be checked at the end of the project, as advanced platform will not be delivered before the last year of the project. Though, identification of commercial plug-ins should be performed before the last year, in order to have time to develop them.

The following action items are entirely driven by those four criteria [A1], [A2], [A3] and [A4].

2.2 Action items

2.2.1 Internal dissemination.

Several project events were organised during year 3:

Dusseldorf Technical workshop. A 2-day technical workshop was organized in Zurich (November 20-21 2006). It was the occasion to present platform architecture and plugin integration. A hands-on session was organized the second day.

Helsinki Technical workshop. A 1-day technical workshop was organized in Helsinki (January 25 2006), centered on Fault Tolerance and Formal Methods.

Newcastle working session. A 2-day working session was organized in Newcastle (January 2007). Farhad Metha (ETH) presented the platform and its usage to the Ncl group, the school and the students.

Winchester plenary meeting. A 2-day meeting was organized in Winchester (March 28-29 2007).

The Rodin platform has been presented / promoted internally by each partner¹.

All documents written by project members are freely accessible on the BSCW server hosted by Newcastle University.

2.2.2 External dissemination.

This action item aims at improving the awareness of the platform among both industry and academic worlds. Envisaged targets are entities involved in the software development, formal methods, mobile agent, fault tolerant systems and/or system-level modeling.

2.2.2.1 Dissemination to industry and technology adaptors.

Industry Day. The main achievement of this year was the latest release of the RODIN platform and its presentation to IIG and associates. At that occasion, a second industry day (RID) was organized in Paris (September 10 2007).

¹ For example, SDIA advanced MSc students in Newcastle did group work using CAMA and the Rodin platform as part of their study.

IIG and associates attendees were:

Fernando Meija	Alstom
Neil Ewans	AWE
Neil Grant	AWE
Alun Lewis	AWE
Colin Marsh	AWE
Christophe Ponsard	Cetic
Paul Simon	DGA
Diana Moisuc	Keesda
Salimeh Behnia	RATP
François Bustany	Systérel
Christophe Metayer	Systérel
Jean-Marc Mota	UTC

Several other industry companies and universities/laboratories were present:

- Bosch, SAP, Siemens Transportation Systems, SGDN/DCSSI, CNES
- Usto, INRETS, Bordeaux 1 Univ., Tesside Univ., Paris 12 Univ., IUT Nantes, La Rochelle Univ., INT, Loria Nancy, Valenciennes Univ., Dusseldorf Univ., Babes Bolay Univ., INRIA, India National Institute of Technology, LRI, King's College

Agenda is given below:

10h00 **Presentation of the RODIN platform** (Alexander Romanovski, Elena Troubitsyna)

- Introduction to Rodin (Alexander Romanovski)
- Rodin Methods to develop fault tolerant systems (Elena Troubitsyna)
- Rodin platform & demonstration (Jean Raymond Abrial)
- Introduction to Rodin plug-ins (Michael Butler)
 - UMLB (Colin Snook)
 - Mobility (Apostolos Niaouris)
 - Pro B (Michael Leuschel)
 - Brama (Antoine Requet)

14h00 **Industrial use of Rodin:**

- From Grafcet to B: an experiment (RATP, ClearSy)
- Validation of Microkernel-based Systems B models with Brama (STmicroelectronics, ClearSy)
- Towards the formal validation of a Java processor in Event-B (AWE)
- Modeling platform screen doors systems (ClearSy)
- Modeling an interlocking system with the Rodin platform (Systerel).

17h00 **End of RODIN Industrial Open Day**

Stable version of tools and plug-ins (platform, proB animator/model checker, mobility plugin, Uml-B, Brama) were presented to the 67 participants.

Presentations of projects making use of the Rodin platform for industrial projects were given by IIG.

All the slides are available at http://www.clearsy.com/html/RODIN_en.html.

Plug-in development. A hands-on session was organized in Dusseldorf 21 November 2006. This event was aimed at explaining how to contribute to the platform and how to develop plug-ins for it, in absence of developer documentation. Around 20 persons attended the day.

Relations with industry. Several presentations / training sessions / support sessions were organized for IIG (DGA, RATP, STMicroelectronics) and for other industry (CNES, etc). Following these events, several R&D projects have been initiated to experiment the platform on target domains:

- Contribution to embedded system rigorous design (STMicroelectronics, ClearSy)
- Interlocking regulation (RATP, Systerel)
- Speed control system (RATP, ClearSy)
- System of System modelling (DGA, ClearSy)
- Distributed embedded navigation software (CNES, ClearSy)

2.2.2.2 *Dissemination to software engineering community*

Jean-Raymond Abrial gave a talk at software engineering (ICSE-2006): Formal methods in industry: achievements, problems, future.

2.2.2.3 *Dissemination to the Formal Methods community*

A [Workshop on Methods, Models and Tools for Fault Tolerance](#) was organized in Oxford (July 3 2007) at IFM 2007: Integrated Formal Methods. 17 talks were given in 4 sessions:

- Fault tolerance: Modelling in B,
- Fault tolerance: requirements, modeling and verification,
- Fault tolerant applications, formal verification
- Processes and architectures

A [one-day tutorial session](#) was organized at the occasion of the B'2007 Conference in Besancon.

2.2.2.4 *Dissemination to the dependability community*

A workshop on Methods, Models and Tools for Fault Tolerance was organized by RODIN (July 3 2007).

RODIN was presented at the occasion of the SAFECOMP conference (September 18 2007) during a full day session: presentation of the platform, ProB and UML-B plugins in the morning, and demonstrations in the afternoon.

RODIN was presented at the occasion of several events:

- DSN 2007: Newcastle short presentation,
- ISORC 07: Newcastle and Aabo joint paper,
- COMPSAC 2007: Newcastle and Aabo joint paper

A Tutorial, *Architecting Fault Tolerant Systems*, was given at WICSA 2007 (Mumbai, India, January 7, 2007).

2.2.2.5 *Links with MDA/UML community*

A talk, Formalizing UML-based Development of Fault Tolerant Control Systems, was given at the Workshop on Methods, Models and Tools for Fault Tolerance (Oxford July 3 2007).

2.2.2.6 *Links with other IST projects*

A joint [workshop on software dependability](#) was organized with Dedisys and Gorda IST projects in Nuremberg (September 18 2007). Projects results were presented and demonstrated during a full day.

DeDiSys, MADAM, GORDA and Rodin organized a special track on Dependable and Adaptive Distributed Systems Track of the 22nd ACM Symposium on Applied Computing March 11 - 15, 2007 Seoul, Korea <http://www.dedisys.org/sac07>.

DeDiSys, MADAM, GORDA and Rodin will organize a Dependable and Adaptive Distributed Systems DADS track at SAC March 16 - 20, 2008, Fortaleza, Ceara, Brazil. <http://www.dedisys.org/sac08>.

2.2.2.7 *Links with other R&D projects*

Several R&D projects are contributing directly to the Rodin platform:

- RIMEL (Loria Nancy, Bordeaux 1 Univ., ClearSy) : design pattern editor
- COSYC (Marseilles Univ., Arboost Technologies, ClearSy): combination of functional and dysfunctional modeling for safety studies

2.2.2.8 *Links with IST*

Several RODIN members joined NESSI - Networked European Software & Services Initiative (<http://www.nessi-europe.com/>).

2.2.3 Internet

Three RODIN Web sites set up during the first months of RODIN have been continuously upgraded to present the current state of the project.

2.2.3.1 *The official site.*

This site is hosted by University of Newcastle and reachable at <http://rodin.cs.ncl.ac.uk/>. This site provides access to the background research papers and workshop presentations, as well as to all public RODIN deliverables.

RODIN
Rigorous Open Development Environment for Complex Systems

Information Society Technologies

HOME

WORKPACKAGES

PARTICIPANTS [RODIN Deliverable D1](#)

INDUSTRIAL INTEREST GROUP Set up of Project Infrastructure Including Website

ASSOCIATE MEMBERS [RODIN Deliverable D2](#)

EXPECTED RESULTS Definitions of Case Studies and Evaluation Criteria for Case Studies

PUBLICATIONS

BACKGROUND [RODIN Deliverable D3](#)
Initial Dissemination Report

DELIVERABLES

EVENTS [RODIN Deliverable D4](#)
Traceable requirements documents for case studies

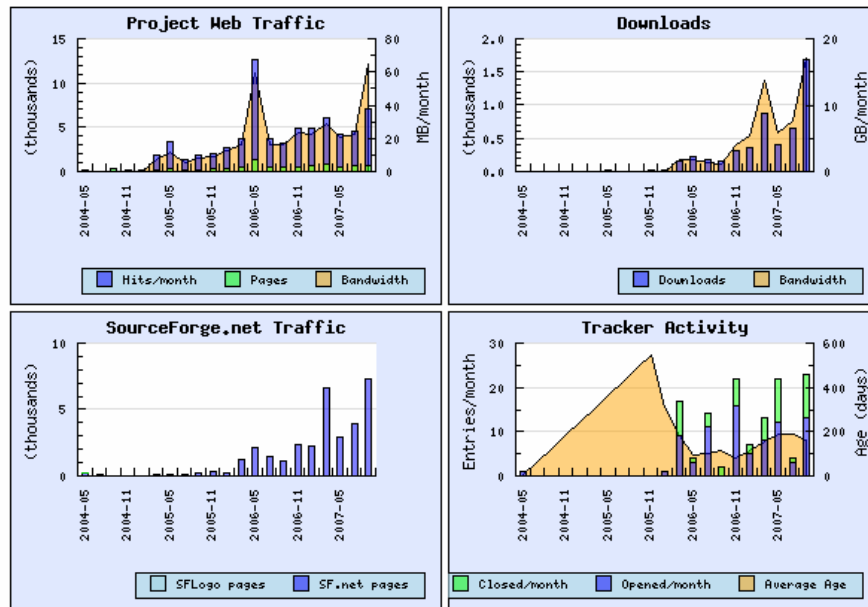
Project Deliverables

Deliverables D1-D20 are available for download, as well as some of the 89 referenced publications.

2.2.3.2 *The developer site.*

This site is hosted by sourceforge and reachable at <http://rodin-b-sharp.sourceforge.net/>. Several packages are available for download (platform, plug-ins, documentation, examples). Global statistics are represented in the 4 following graphs.

Usage Statistics For RODIN



The Sourceforge website provides some facilities to evaluate Rodin platform popularity (downloads, website hits, trackers statistics, etc) But as downloads are anonymous, a careful analysis is required to

Release	Downloads Windows	Downloads Linux	Downloads MacOS	Downloads Total
0.8.0	166	62	40	268
0.7.6	69	20	22	111
0.7.5	163	69	27	259
0.7.4	167	70	32	269
0.7.3	299	74	37	410
0.7.2	107	50	25	182
0.7.1	218	82	52	352
0.7.0	79	38	30	147
0.6.1	104	59	22	185
0.6.0	48	28	16	52
0.5.4	340	163	N/A	503
0.5.0	45	30	N/A	75

Table 1: platform downloads over releases

The Rodin has been downloaded 3475 times, from March 2006 to September 2007, over 12 successive releases. Figures tend to stabilize and lead to 270 active users estimate.

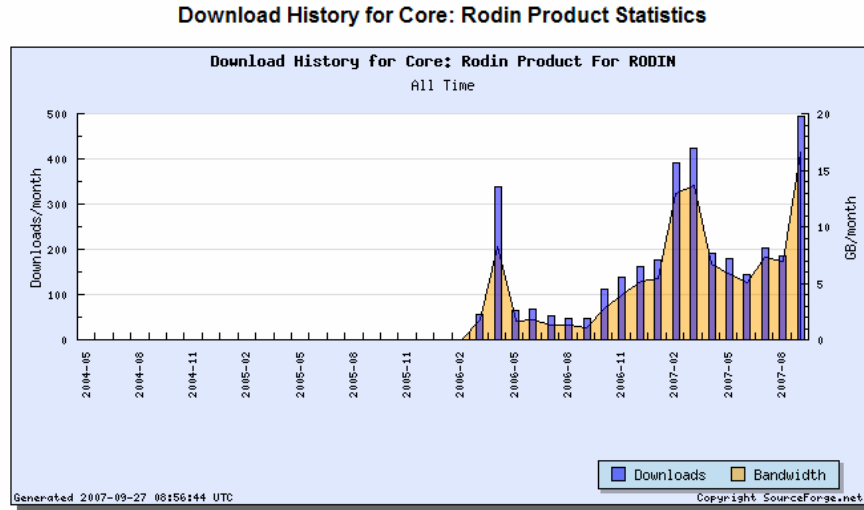


Figure 1: platform downloads

The Rodin mathematical font (item “*Brave Sans Mono Font*”), mandatory to properly display models, has to be downloaded independently from the platform itself. Hence number of downloads of this font is a good indicator of how much people have tried to install the Rodin platform. This file has been downloaded 1171 times.

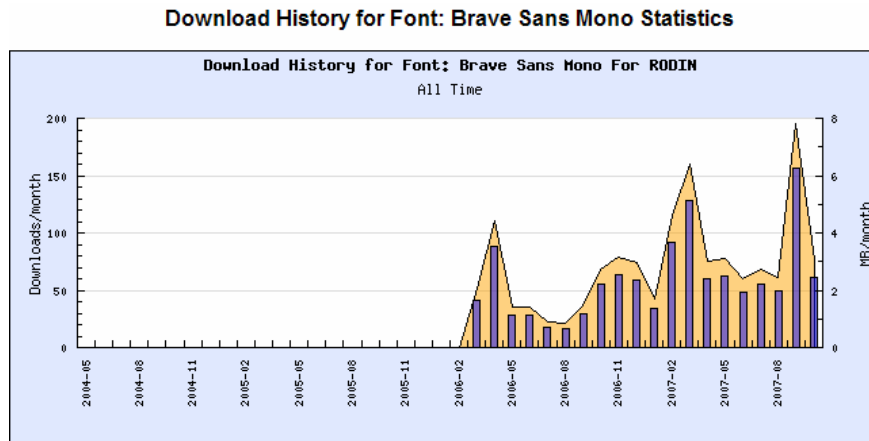
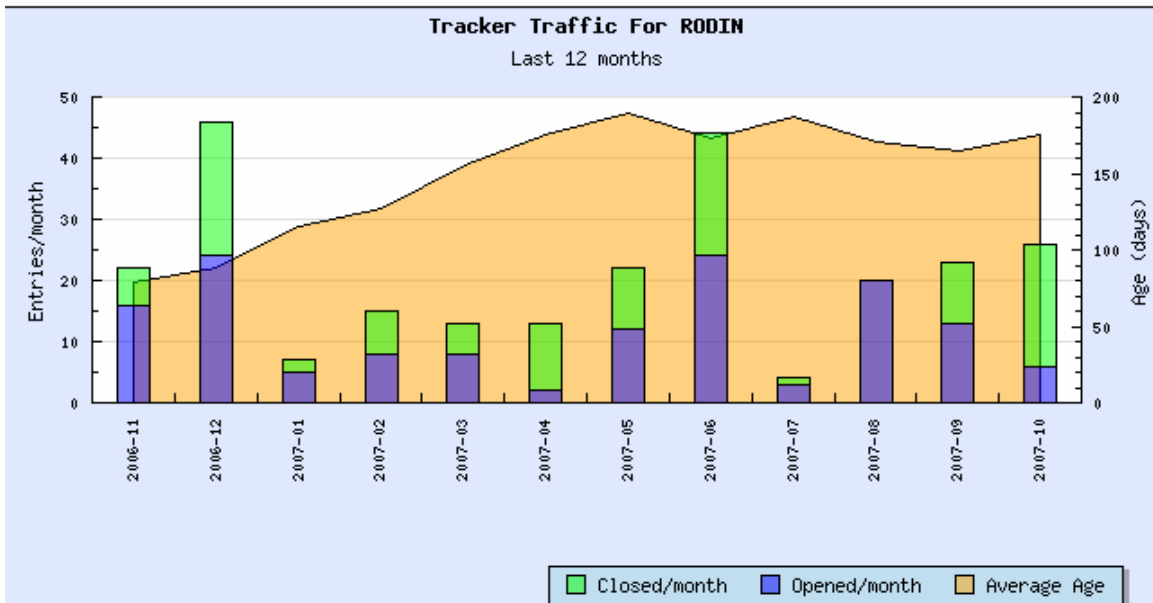


Figure 2: mathematical font downloads

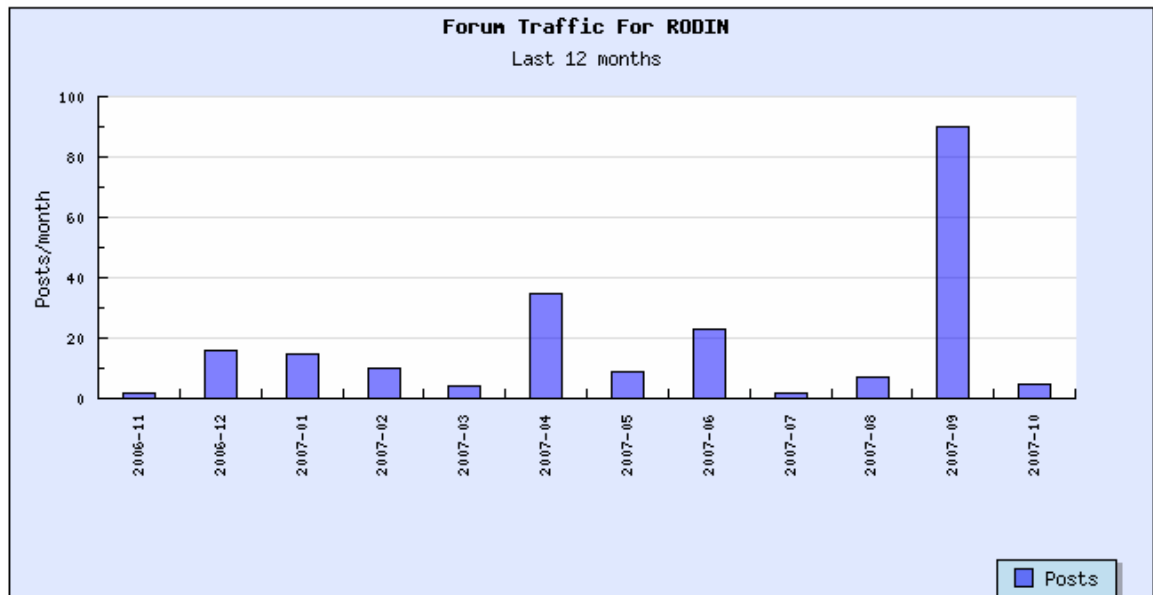
Below are some statistics showing the number of bugs/feature request opened and closed during the last year of the project.

Tracker Traffic Statistics



Below are the statistics representing the messages posted on the 5 different forums set up at the beginning of the project. 218 messages have been posted.

Forum Traffic Statistics



2.2.3.1 The platform web site

A [one-page website](#) has been set up at the occasion of the latest platform release. This page provides links to all resources available for Rodin, explains what is required to have it working and how to install these resources.



What is the Rodin platform ?

Rodin is an open tool platform for the cost effective rigorous development of dependable complex software systems and services. This platform is based on the [event-B](#) formal method and provides natural support for [refinement](#) and mathematical proof. This platform contributes to Eclipse framework and is extendable with plugins.

Rodin development has been partly funded by the European Union (IST project n° 511599), from September 2004 to October 2007..

Supported platforms

Resources

This website references all Rodin resources, including the platform itself, plug-ins, manual and tutorials. In case one or several items are not listed here, please send an email to dissemination@users.sourceforge.net

Name	Category	Description	Date/Version	Installation
Rodin platform	Software	Core software	0.8.0 Sep 05 2007	<ul style="list-style-type: none">• Download the installer then execute it• Download the True Type B font then install it on your computer• Start Rodin• Install B4free provers plugin to take advantage of Rodin proof capabilities

2.2.4 Publications

2.2.4.1 Journal papers and book chapters

A number of journal papers and book chapters have been published during year 3 of the project. They include:

- Y, Chen, A, Romanovsky.
[A mediator system for improving dependability of web services.](#)
In Dependable Systems and Networks - DSN 2006, Supplemental volume. 2006. pp.132-133.
- A. Iliasov, A. Romanovsky.
[Structured Coordination Spaces for Fault Tolerant Mobile Agents.](#)
In Advanced Topics in Exception Handling Techniques. LNCS-4119. 2006. pp.

181-199.

- Randell, B. and Ryan, P.Y.A.
[Voting Technologies and Trust](#)
IEEE Security & Privacy, Volume 4, Issue 5, pp 50-56 IEEE Computer Society, 2006
- Jones, C.B. and Randell, B.
[The role of structure: a dependability perspective.](#)
In: Structure for Dependability: Computer-Based Systems from an Interdisciplinary Perspective, Besnard, D., Gacek, C. and Jones, C.B.(eds) pp. 3-15 Springer ISBN: 1-84628-110-5 2006
- Randell, B.
[Foreword](#)
In: Advanced Topics in Exception Handling Techniques, Dony, C., Knudsen, J.L., Romanovsky, A., and Tripathi, A. (eds) pp. vii-viii Series: Lecture Notes in Computer Science Volume 4119 Springer ISBN: 3-540-37443-4 2006
- V.Khomenko, A.Kondratyev, M.Koutny and W.Vogler, Merged Processes: [a New Condensed Representation of Petri Net Behaviour](#), Acta Informatica, Volume 43, Issue 5, pp 307-330 Springer, 2006
- V. Khomenko and M. Koutny
[Verification of Bounded Petri Nets Using Integer Programming.](#)
Springer-Verlag, Formal Methods in System Design (2006) 143-176.
- Joey W. Coleman and Cliff B. Jones.
[A structural proof of the soundness of rely/guarantee rules.](#)
Journal of Logic and Computation, 17(4):807-841, August 2007.
- Snook, C. and Butler, M. (2006)
[UML-B: Formal modelling and design aided by UML.](#)
ACM Transactions on Software Engineering and Methodology 15(1) pp. 92-122.
- Dubravka Ilic, Elena Troubitsyna, Linas Laibinis, and Colin Snook.
[Formal Development of Mechanisms for Tolerating Transient Faults.](#)
Rigorous Development of Complex Fault-Tolerant Systems (REFT 2005), LNCS 4157, page(s): 189-209, Springer-Verlag, November 2006

2.2.4.2 Conference papers

A number of conference papers have been published during year 3 of the project. They include:

- R.Devillers, H.Klaudel and M.Koutny
[A Petri Net Translation of p-Calculus Terms](#)
In Proceedings of the Theoretical Aspects of Computing - ICTAC 2006.
Lecture Notes in Computer Science Volume 4281 pp. 138-152 Springer 2006
- B. Gallina, N. Guelfi, A. Romanovsky.
[Coordinated Atomic Actions for Dependable Distributed Systems: the Current State in Concepts, Semantics and Verification Means.](#)
In Proceedings of the 18th International Symposium on Software Reliability Engineering, ISSRE 2007, November 2007. IEEE CS. 2007
- Gorbenko A., Kharchenko V., Romanovsky A.
[On Composing Dependable Web Services Using Undependable Web Components.](#)
Int. J. Simulation and Process Modelling, 3, 1/2, 2007. Pp. 45-54
- Yadav, D. and Butler, M. (2007)
[Formal Development of Fault Tolerant Transactions for a replicated Database using Ordered Broadcasts.](#)
In Proceedings of Methods, Models and Tools for Fault Tolerance (MeMoT 2007) (in press), pp. 33-42, Oxford.
- R.Devillers, H.Klaudel and M.Koutny
[Modelling Mobility in High-Level Petri Nets](#)
In Proceedings of the Seventh International Conference on Application of Concurrency to System Design, IEEE Computer Society 2007 pp. 110-119
- A. Capozucca, N. Guelfi, P. Pelliccione, A. Romanovsky, A. Zorzo.
[CAA-DRIP: a framework for implementing Coordinated Atomic Actions.](#)
In 17th International Symposium on Software Reliability Engineering (ISSRE'06), 2006. pp. 385-394
- B.Randell and M.Koutny
[Failures: Their Definition, Modelling and Analysis](#)
In Proceedings of the Theoretical Aspects of Computing - ICTAC 2007.
Lecture Notes in Computer Science Springer 2007 pp. 260-271

- P. Boström, M. Neovius, I. Oliver and M. Waldén.
[Formal Transformation of Platform Independent Models into Platform Specific Models.](#)
In Proceedings of the 7th International B Conference (B2007), Besançon, France, LNCS, January 2007. Springer-Verlag. To appear.
- C. Snook and M. Waldén.
[Refinement of Statemachines using Event B semantics](#)
In Proceedings of the 7th International B Conference (B2007), Besançon, France, LNCS, January 2007. Springer-Verlag. To appear.
- Budi Arief, Alexei Iliasov, and Alexander Romanovsky.
[Rigorous Development of Ambient Campus Applications that can Recover from Errors.](#)
Presented at the Workshop on Methods, Models and Tools for Fault-Tolerance (MeMoT 2007) at the International Conference on Integrated Formal Methods 2007 (IFM 2007), pp. 103-110, 3 July 2007.
- Alexei Iliasov, Alexander Romanovsky, Budi Arief, Linas Laibinis and Elena Troubitsyna.
[On Rigorous Design and Implementation of Fault Tolerant Ambient Systems.](#)
Proceedings of 10th IEEE International Symposium on Object and Component-Oriented Real-Time Distributed Computing (ISORC07), Santorini Island, Greece, 7-9 May, pp. 141-145, 2007.
- Leuschel, M., Cansell, D. and Butler, M. (2007)
[Validating and Animating Higher-Order Recursive Functions in B.](#)
In Proceedings of Festschrift for Egon Börger (in press). Abrial, J. R. and Glässer, U., Eds.
- Satpathy, M., Butler, M., Leuschel, M. and Ramesh, S. (2007)
[Automatic Testing from Formal Specifications.](#)
In Proceedings of International Conference on Tests And Proofs (TAP) (in press), ETH Zurich, Switzerland.
- Leuschel, M., Butler, M., Spermann, C. and Turner, E. (2007)
[Symmetry Reduction for B by Permutation Flooding.](#)
In Proceedings of 7th International B Conference LNCS 4355, Besancon. France.
- Ball, E. and Butler, M. (2007)
[Event-B Patterns for Specifying Fault-Tolerance in Multi-Agent Interaction.](#)
In Proceedings of Methods, Models and Tools for Fault Tolerance, Oxford, UK.

- M.Koutny, G.Pappalardo and M.Pietkiewicz-Koutny
[Compositional Abstractions for Interacting Processes](#)
International Conference on Principles of Information Technology and Applications (PITA'07), 2007
- Abrial, J. R., Butler, M., Hallerstede, S. and Voisin, L. (2006)
[An open extensible tool environment for Event-B.](#)
In Proceedings of ICFEM 2006 Lecture Notes in Computer Science 4260, Macau. Liu, Z. and He, J., Eds.
- T. Lecomte, T Servat, G. Pouzancre.
[Formal Methods in Safety-Critical Railway Systems](#)
in Proceedings of Brazilian Symposium on Formal Methods: SMBF 2007, 26-30 August 2007, Outo Preto, Brazil.
- R. Razali, C. F. Snook, M. R. Poppleton, P. W. Garratt and R. J. Walters
[Experimental Comparison of the Comprehensibility of a UML-based Formal Specification versus a Textual One](#)
In Proc. 11th International Conference on Evaluation and Assessment in Software Engineering (EASE), pp. 1-11, Keele, Staffordshire, April 2-3, 2007.
- A. Iliasov, A. Romanovsky.
[Choosing Application Structuring and Fault Tolerance Using Assumptions.](#)
In Proc. Dependable Systems and Networks (DSN), 2007, Supplemental volume, Fast Abstract. Edinburgh. UK. 2007.
- Leavens, G. T., Abrial, J. R., Batory, D., Butler, M., Coglio, A., Fisler, K., Hehner, E., Jones, C. B., Miller, D., Peyton-Jones, S., Sitaraman, M., Smith, D. R. and Stump, A. (2006)
[Roadmap for Enhanced Languages and Methods to Aid Verification.](#)
In Proceedings of Generative Programming and Component Engineering, 5th International, Portland, Oregon.
- F. Mehta.
[Supporting Proof in a Reactive Development Environment.](#)
Proceedings of the 5th IEEE International Conference on Software Engineering and Formal Methods (SEFM), London, UK. IEEE Press. 2007
- Dubravka Ilic, Elena Troubitsyna, Linas Laibinis, and Sari Leppänen.
[Formal Verification of Consistency in Model-Driven Development of Distributed Communicating Systems and Communication Protocols.](#)
In Proceeding of the 2nd International Symposium on Leveraging Applications of Formal Methods, Verification and Validation. Paphos, Cyprus, November 2006

- Dubravka Ilic, Elena Troubitsyna, Linas Laibinis, and Colin Snook.
[Formalizing UML-based Development of Fault Tolerant Control Systems.](#)
In Proceedings of Workshop on Methods, Models and Tools for Fault Tolerance,
page(s): 70-79, Oxford, July 2007

2.2.4.3 *Workshop presentations*

Several talks were given, in relation with RODIN. They are listed below:

- R. Razali, C. Snook, M. Poppleton and P. Garratt
[Usability Assessment of a UML-based Formal Modelling Method](#)
In Proc. 19th Annual Workshop of the Psychology of Programming Interest
Group (PPIG), pp. 56-71, Joensuu, Finland, July 2-6, 2007.
- A. Iliasov.
[Refinement patterns for rapid development of dependable systems.](#)
Proc. Engineering Fault Tolerant Systems Workshop (at ESEC/FSE, Croatia),
ACM Digital Library. (September 4, 2007)
- Iliasov, A., Romanovsky, A., Arief, B., Laibinis L. and Troubitsyna, E.
[A Framework for Open Distributed System Design.](#)
In Proceedings of Computer Software & Applications Conference (COMPSAC
07), Volume II - Workshop Papers, pp. 658-668, July 2007, Beijing, China. IEEE
Computer Society, Conference Publishing Services, 2007.

2.2.4.4 *Technical reports*

A technical report was written, in relation with RODIN:

- Razali, R., Snook, C., Poppleton, M. and Garratt, P. (2007)
[Comprehensibility of UML-B - A Series of Controlled Experiments.](#)
Technical Report, DSSE/ECS, University of Southampton.[Online].

2.2.5 *IIG*

The Industry Interest Group is today composed of 14 members:

- Adelard,
- Alstom,
- AWE,
- CETIC,
- DGA,
- Escher,
- Gemplus,

- IBM,
- ICCC,
- Qinetiq,
- RATP,
- Stmicroelectronics,
- Systemel
- VTT.

This group is stable.

Alstom, AWE, DGA, RATP and Systemel attended the RODIN Industry Day. AWE and Systemel gave presentations at that occasion.

2.2.6 Associates

We encourage academic researchers to register as associate, in order to have a privileged access to RODIN information. For the time being, several researchers are registered as associates:

- Carroll Morgan (University of New South Wales, Australia)
- Ron Van der Meyden (University of New South Wales, Australia)
- Nicolas Guelfi Ries (University of Luxembourg)
- Benoit Ries (University of Luxembourg)
- Reza Razavi (University of Luxembourg)
- Jean Louis Boulanger (Université Technologique de Compiègne, France)
- Pierre-Yves Schobbens (Facultés Universitaires Notre-Dame de la Paix / Namur, Belgium)
- Christophe Ponsard (CETIC Applied Research center / Charleroi, Belgium)
- Nicole Levy (University of Versailles, France)
- Jim Woodcock (University of York, UK)
- Dominique Cansell (Loria-Nancy, France)
- Cecilia Rubira (University of Campinas, Brazil)
- Fernando Castro Filho (University of Campinas, Brazil)
- Michael Leuschel (Dusseldorf University, Germany)
- Swapan Bhattacharya (Javadpur University, India)
- Friedrich von Henke (Ulm University, Germany)
- Fabrice Bouquet (Laboratoire d'Informatique de l'Université de Franche-Comté, France)
- Juan Bicarregui (RutherfordAppleton Lab / CCLRC)
- Shinichi Honiden (NII, University of Tokyo)
- Eric Platon (NII)

Juan Bicarregui, Shinichi Honiden and Eric Platon have joined the associates group during the reported period.

2.2.7 Plug-in identification

During the last year of the project, a new plug-in has been developed by Southampton university (B2Latex) to enable researchers to publish their models.

2.3 *Status of the exploitation/dissemination activities*

At the end of the project, the following facts have been established:

- The RODIN platform has been downloaded by 1171 distinct users
- The RODIN platform has 270 active users
- Courses based on the RODIN platform are given in universities: LORIA Nancy (France), ENSEIRB Bordeaux (France), University of New South Wales (Australia)
- One plug-in developed outside the project (ProB by Dusseldorf University)
- Four IIG members providing feedback on the platform (AWE, DGA, STmicroelectronics, Systerel),
- One IIG member using the platform for industrial project: Systerel
- One plug-in released as commercial product (Brama), with several customers.

So we can consider that our four criteria [A1], [A2], [A3] and [A4] are fulfilled.

However [A4]

Some dedicated plug-ins are commercially available and have been sold/are about to be sold to companies.

is only partly addressed, as only one plug-in is available, developed by one project member. The main reason is that developer resources have not been made available before the end of the project. Another reason is that the RODIN platform hasn't yet entered the industry field outside IIG: tool developments without industry user base can't be easily funded, apart within R&D projects.

There is no real business plan to set up at the end of the project, as the stable release of the platform is recent (September 2007) and user base has to increase. The platform and its related plug-ins have to be advertised and demonstrated to apply to large size, industry strength systems / problems, mandatory condition for its deployment in the industry.