



Project DEPLOY
Grant Agreement 214158
*“Industrial deployment of advanced system engineering methods for high
productivity and dependability”*



DEPLOY Deliverable D14

D15.2 Year 1 Annual Dissemination/Exploitation Report

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1 Introduction

This document aims at reporting project achievements on dissemination and exploitation from DEPLOY during year 1. It will be updated every year, completed with progress made, and delivered at month M12 (D14), M24 (D27), M36 (D37), and M48 (D52).

2 Achievements

This chapter presents DEPLOY's first year dissemination and exploitation achievements.

2.1 DEPLOY Interest Group (DIG)

The DEPLOY Interest Group is a community that is of paramount importance for the project, as its members have specifically declared their interest and support. Hence the overall dissemination/exploitation activity is centered on the DEPLOY Interest Group, gathering companies, universities, and individuals interested in the RODIN platform. The DIG has privileged access to information such as bi-annual newsletter, dedicated hands-on sessions, etc.

DIG members may:

- join the group. A simple (electronic) letter of intent is sufficient. Joining the DIG is free of charge;
- provide feedback on the platform and related plug-ins, by using the platform and sharing experience and expectation;
- provide complementary case-studies and examples covering similar or new application domains;
- attend dedicated trainings and hands-on sessions, organized specifically for the DIG upon request.

Special attention is given to the DIG: dedicated means are allocated to help DIG members getting educated and gaining experience with the Rodin tools.

To increase membership in the DIG, our strategy is threefold:

- invite Rodin project followers to join the DIG,
- send personal invitations to join,
- promote the DIG at each dissemination event.

This will be coordinated with the organization of industrial days, local action of partners, etc., when possible.

Communication is ensured by a dedicated mailing-list, a newsletter, and industry days. DIG members will be personally invited to all our dissemination events.

Current DEPLOY Interest Group members are:

- Marc Benveniste (STMicroelectronics - France)
- Ian Oliver (Nokia - Finland)
- O. Sami Saydjari (Cyber Defense Agency)
- Ken Robinson (University of South Wales - Australia)
- Juan Bicarregui (Formal Methods Europe)
- Arylido G. Russo Jr. (Acesso e Segurança - Brazil)
- John Brightman (AT ENGINE CONTROLS, UK)
- Vecheslav Kharchenko (National Aerospace University - Ukraine)
- Jean Mermet (Keesda - France)
- Viktor Mashkov (University J.E.Purkyne, Czech Republic)
- Colin O'Halloran (Qinetiq - UK)
- Andreas Enbacka (Sysart Oy, Finland)

In order to populate the DIG with relevant users, we have initiated a survey ("[We need to know who you are](#) !") where people have the opportunity to register to the DIG and to the newsletter as well.

2.2 Events

DEPLOY results were presented at several occasions, listed in the table below.

Date	Location	Title
January 26 th 2008	Toulouse (France)	ERTS 2008. Special Event: Open Source Embedded Real Time Software. Presentation "A System Development Process with Event-B and the Rodin Platform"
March 29 th 2008	Budapest (Hungary)	ETAPS: Formed 2008 Workshop. Formal Methods in Computer Science Education. Presentation "Experience in Teaching Event-B Formal Method"
April 21 st -25 th 2008	Tunis (Tunisia)	A presentation was given: "Event-B and the Rodin Platform" at Unesco Chair in Tunis
April 23 rd -26 th 2008	Kirivograd (Ukraine)	Rodin platform demo at Third International Conference on Dependable Systems, Services and Technologies
May 26 th -27 th 2008	Turku (Finland)	A tutorial "Event-B and the Rodin Platform" was given at the occasion of the FM2008 conference DEPLOY project has been presented at the exhibition of research projects and commercial tools
June 13 rd 2008	Berlin (Germany)	A general presentation about the DEPLOY project was given at Intern. Symposium on Quality Engineering for Embedded Systems
June 15 th -17 th 2008	Valencia (Spain)	Static Analysis Symposium – PPDP workshop: a presentation was given "Declarative Programming for Verification: Lessons and Outlook"
June 16 th 2008	Chian (China)	TASE 2008: a presentation was given "ProB gets Nauty: Effective Symmetry Reduction for B and Z Models"

Date	Location	Title
June 17 th -19 th 2008	Nantes (France)	"Presentation of Event-B and the Rodin Platform" - Special day on B organized by the Nantes University
August 26 th 2008	Salvador (Brazil)	B Dissemination Day at SBMF 2008 Conference
August 28 th 2008	Sao Paulo (Brazil)	B Dissemination Day at the Instituto de Pesquisas Tecnológicas do Estado de São Paulo
September 1 st -3 rd 2008	Istanbul (Turkey)	ICTAC: Using Design Patterns in the Event-B Formal Method.
October 6 th -19 th 2008	Toronto (Canada)	VSTTE workshops : talks were given on: "Applying Rodin and Event-B to the filestore" and "A Roadmap for the Rodin Toolset"
October 21 st -23 rd 2008	SophiaAntipolis (France)	DEPLOY consortium participated with 4 invited talks in Software Technologies Concertation on Formal Methods for Components and Objects
October 22 nd 2008	SophiaAntipolis (France)	DEPLOY presented at a concertation meeting on: From Components to Services to Utilities organized by the EU GridCOMP project.
October 27 th - 31 st 2008	Kitakyushu (Japan)	IFCEM 2008: a presentation was given "Probing the Depths of CSP-M: A new FDR-compliant Validation Tool"
November 17 th -19 th 2008	Newcastle (UK)	Dedicated session reporting DEPLOY initial results and general presentations about the project SERENE 08 - RISE/EFTS Joint International Workshop on Software Engineering for Resilient Systems
November 27 th -28 th 2008	Cambridge (UK)	Workshop on Linking Formal Design and Verification Tools (Microsoft Research Cambridge) - A presentation was given "Design and verification using Rodin"



The B Dissemination Day at São Paulo was aimed at initiating the creation of a new laboratory, in connection with the Brazilian industry, as well as attracting students. Around 45 persons, coming from various fields (transportation, bank, telecommunications, etc.) attended this event (Alstom Energia e Transportes, Nextview, Compugraf, Companhia do Metropolitano de San Paulo, Banco Itaó, Companhia de Trens Metropolitanos, KALBTEL telecomunicações, Instituto tecnologico de aeronotica, Ephasys IT solutions, Altec do Brasil, etc.). Finally, the laboratory, Laboratório de Engenharia de Requisitos de Software, run by Prof. Dr. Paulo Sérgio Muniz Silva, will open in February 2009.

2.3 Electronic Dissemination

All materials related to DEPLOY and the Rodin platform are made electronically available:

- Platform and plug-ins source code
- Project deliverables, papers, and manuals
- Teaching material
- Models (including case-study description)

Websites. Two DEPLOY websites are related to the project:

- the official site, hosted by ClearSy and reachable at <http://www.deploy-project.eu>. It contains useful information about the project, its objectives. This site nicely integrates two other websites, hosted by Southampton University:
 - the DEPLOY repository (<http://deploy-eprints.ecs.soton.ac.uk/>), containing all the project deliverables, publications, tutorials, models, etc. External stakeholders are invited to contribute to the DEPLOY repository.
 - the Event B site (<http://www.event-b.org/>) gathering information on the Rodin platform and its plugins.
- the developer site, hosted by sourceforge and reachable at <http://rodin-b-sharp.sourceforge.net/>.

Publications. The following articles (the publication list is on the website) having been published in 2008 and are available on the publications website:

1. Abrial, Jean-Raymond and Butler, Michael and Hallerstede, Stefan and Voisin, Laurent (2008) [A Roadmap for the Rodin Toolset](#). In: Abstract State Machines, B and Z, First International Conference ABZ 2008.
2. Butler, Michael and Yadav, Divakar (2008) [An Incremental Development of the Mondex System in Event-B](#). Formal Aspects of Computing, 20 (1). pp. 61-77.
3. Fitzgerald, John S and Bryans, Jeremy W and Greatehead, David and Jones, Cliff B and Payne, Richard (2008) [Animation-based Validation of a Formal Model of Dynamic Virtual Organisations](#). Electronic Workshops in Computing, <http://www.bcs.org/server.php?show=nav.10007> .
4. Leuschel, Michael (2008) [Declarative Programming for Verification: Lessons and Outlook](#). In: Proceedings of PPDP'2008. ACM Press.
5. Abrial, Jean-Raymond and Hoang, Thai Son and Schmalz, Matthias (2008) [Deliverable D8 D10.1 "Teaching Materials" --- Exercises](#). [DEPLOY Deliverable]
6. Abrial, Jean-Raymond and Hoang, Thai Son and Schmalz, Matthias (2008) [Deliverable D8 D10.1 "Teaching Materials" --- Lecture Materials](#). [DEPLOY Deliverable]
7. Abrial, Jean-Raymond and Hoang, Thai Son and Schmalz, Matthias (2008) [Deliverable D8 D10.1 "Teaching Materials" --- Rodin Platform Archives](#). [DEPLOY Deliverable]

8. Abrial, Jean-Raymond and Hoang, Thai Son and Schmalz, Matthias (2008) [Deliverable D8 D10.1 "Teaching Materials" --- Summary Materials](#). [DEPLOY Deliverable]
9. Romanovsky, Alexander (2008) [DEPLOY: Industrial Deployment of Advanced System Engineering Methods for High Productivity and Dependability](#). ERCIM News (74). pp. 54-55.
10. Leuschel, Michael and Samia, Mireille and Bendisposto, Jens and Samia, Mireille (2008) [Easy Graphical Animation and Formula Visualisation for Teaching B](#). In: The B Method : From Research to Teaching, June 16, 2008, Nantes, France.
11. Gorbenko, Anatoliy and Kharchenko, Vyacheslav and Romanovsky, Alexander and Mikhaylichenko, Alexey (2008) [Experimenting with Exception Propagation Mechanisms in Service-Oriented Architectures](#). In: 4th International Workshop on Exception Handling (WEH.08), at ACM SIGSOFT 2008/FSE 16, 14 November, 2008, Atlanta, USA. (In Press)
12. Laibinis, Linas and Troubitsyna, Elena and Iliasov, Alexei and Romanovsky, Alexander (2008) [Formal development of cooperative exception handling for mobile agent systems](#). In: 1st Int. workshop on Software Engineering for Resilient Systems - SERENE 2008, November 17-19, 2008, Newcastle upon Tyne (UK). (In Press)
13. Bryans, Jeremy W. and Fitzgerald, John S. and Alexander, Romanovsky and Andreas, Roth (2008) [Formal Modelling and Analysis of Business Information Applications with Fault Tolerant Middleware](#). Newcastle University, Newcastle University TR. (Submitted)
14. Laibinis, Linas and Troubitsyna, Elena and Iliasov, Alexei and Romanovsky, Alexander (2008) [Formal Refinement Automation](#). In: Eighth International Workshop on Automated Verification of Critical Systems, 30 September –1 October 2008, Glasgow. (Unpublished)
15. Ponsard, Christophe and Dallons, Gautier and Philippe, Massonet (2008) [From Rigorous Requirements Engineering to Formal System Design of Safety-Critical Systems](#). ERCIM News (75). pp. 22-23. ISSN ISSN 0926-4981
16. Butler, Michael (2008) [Incremental Design of Distributed Systems with Event-B](#). In: Marktoberdorf Summer School 2008 Lecture Notes. IoS. (In Press)
17. Macedo, Hugo Daniel and Larsen, Peter Gorm and Fitzgerald, John (2008) [Incremental Development of a Distributed Real-Time Model of a Cardiac Pacing System using VDM](#). In: Formal Methods 2008, 28-30 May, 2008, Turku, Finland.
18. Bendisposto, Jens and Leuschel, Michael and Ligtot, Olivier and Samia, Mireille (2008) [La validation de modèles Event-B avec le plug-in ProB pour RODIN](#). TSI . pp. 1065-1084.
19. Hoang, Thai Son and Basin, David and Kuruma, Hironobu and Abrial, Jean-Raymond (2008) [Link State Routing Development](#). [Rodin Archive]
20. Edmunds, Andrew and Butler, Michael (2008) [Linking Event-B and Concurrent Object-Oriented Programs](#). In: Refine 2008 - International Refinement Workshop.
21. Damchoom, Kriangsak and Butler, Michael and Abrial, Jean-Raymond (2008) [Modelling and proof of a Tree-structured File System](#). In: ICFEM 2008. (In Press)
22. Hallerstede, Stefan (2008) [On the Purpose of Event-B Proof Obligations](#). In: ABZ2008, September 2008, London. (In Press)

23. Wieczorek, S. and Roth, A. and Stefanescu, A. and Charfi, A. (2008) [Precise Steps for Choreography Modeling for SOA Validation and Verification](#). In: Proceedings of the Fourth IEEE International Symposium on Service-Oriented System Engineering, Dec 18-19, Jhongli, Taiwan.
24. Spermann, Corinna and Leuschel, Michael (2008) [ProB gets Nauty: Effective Symmetry Reduction for B and Z Models](#). In: Proceedings of TASE 2008. IEEE Press, pp. 15-22.
25. Leuschel, Michael and Butler, Michael (2008) [ProB: An Automated Analysis Toolset for the B Method](#). International Journal on Software Tools for Technology Transfer, 10 (2). pp. 185-203.
26. Leuschel, Michael and Fontaine, Marc (2008) [Probing the Depths of CSP-M: A New FDR-Compliant Validation Tool](#). In: Proceedings of ICFEM 2008. Springer-Verlag, pp. 278-297.
27. Iliasov, Alexei and Romanovsky, Alexander (2008) [Refinement Patterns for Fault Tolerant Systems](#). In: EDCC 7: the Seventh European Dependable Computing Conference (EDCC-7), May 7-9, 2008, Kaunas, Lithuania. (In Press)
28. Fitzgerald, John S and Jones, Cliff B (2008) [The connection between two ways of reasoning about partial functions](#). Information Processing Letters, 107 (3-4). pp. 128-132.
29. Leuschel, Michael (2008) [The High Road to Formal Validation: Model Checking High-Level versus Low-Level Specifications](#). In: Proceedings ABZ'2008. Springer-Verlag, pp. 4-23.
30. Iliasov, Alexei and Laibinis, Linas and Romanovsky, Alexander and Sere, Kaisa and Troubitsyna, Elena (2008) [Towards Rigorous Engineering of Resilient Pervasive Systems](#). In: Seventh European Dependable Computing Conference (EDCC-7), May 7-9, 2008, Kaunas, Lithuania.
31. Snook, Colin and Butler, Michael (2008) [UML-B and Event-B: an integration of languages and tools](#). In: The IASTED International Conference on Software Engineering - SE2008. (In Press)
32. Snook, Colin and Butler, Michael (2008) [UML-B: A plug-in for the Event-B tool set](#). In: Abstract State Machines, B and Z, First International Conference ABZ 2008.

The DEPLOY repository is composed of several subject areas (event-B language, industrial deployment, methodology, tool developments, and training). A snapshot of the resources currently available is given below:

- **Deploy Subject Areas (38)**
 - **Event-B (15)**
 - **Event-B Examples (10)**
 - **Event-B Theory (4)**
 - **Industrial Deployment (6)**
 - **Business (2)**
 - **Other (2)**
 - **Methodology (16)**
 - **Composition and reuse (5)**
 - **Other (1)**
 - **Proof and model checking (1)**
 - **Refinement (4)**
 - **Requirements and evolution (1)**
 - **Resilience (5)**
 - **Tool developments (15)**
 - **Model checking (6)**
 - **Other (1)**
 - **Provers (2)**
 - **Rodin platform (2)**
 - **Rodin plug-ins (2)**
 - **Training (8)**
 - **Event-B (5)**
 - **Rodin tool (6)**

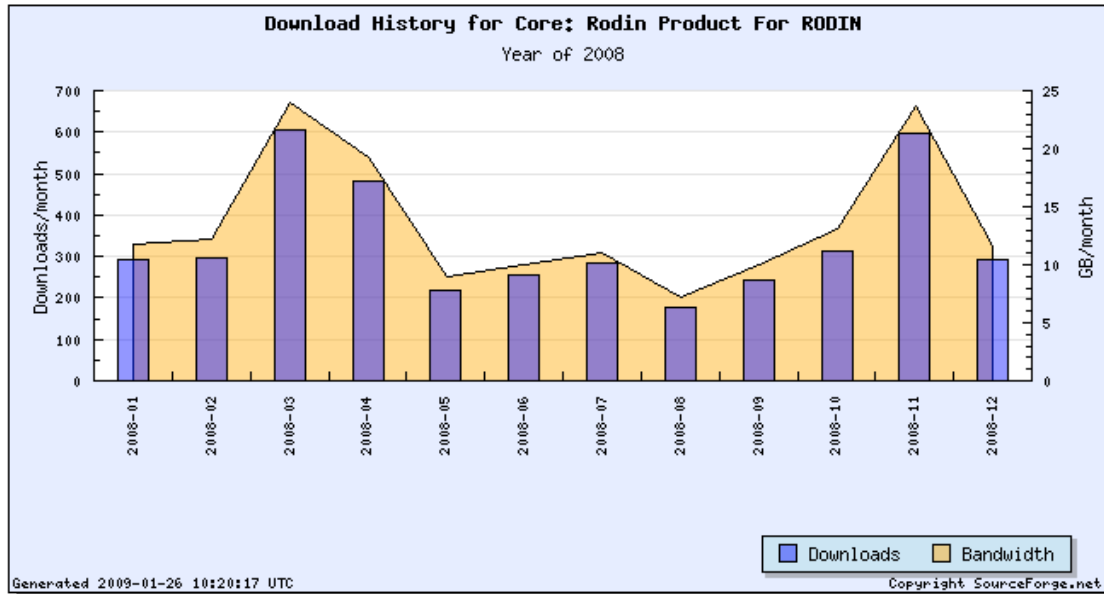
Metrics. Statistics are collected in the project to evaluate Rodin platform and the DEPLOY project's popularity. The measurement of DEPLOY websites hits from foreign IP addresses will provide an estimate of the awareness and the interest concerning DEPLOY in both the industry and academic worlds. Reverse links are used to improve our Google score, thus improving our visibility on the Net.

The start of the DEPLOY project has been announced via several media (mailing lists, user groups, etc.).

DEPLOY websites statistics (number of monthly unique visits) are given below (for the first 12 months of the project):

	<i>01</i>	<i>02</i>	<i>03</i>	<i>04</i>	<i>05</i>	<i>06</i>	<i>07</i>	<i>08</i>	<i>09</i>	<i>10</i>	<i>11</i>	<i>12</i>
Publications	62	383	359	410	411	364						
Event-B.org	38	144	477	600	486	488	488	489	554	586	654	373
Wiki Event-B.org	0	0	12	11	10	146	384	722	540	927	1483	827
Deploy-project.eu	2586	4741	5936	6365	7741	7770	8618	5988	3164	3561	4338	4262

Sourceforge statistics (number of downloads) are listed below:



The platform has been downloaded 3 416 times, as follows:

		<i>Version</i>			
		<i>0.8.0</i>	<i>0.8.1</i>	<i>0.8.2</i>	<i>0.9.0</i>
Operating System	Windows	172	314	1214	408
	MacOS	26	44	203	89
	Linux	114	142	540	150
	Total	312	500	1957	647

Platform exploitation. A coordination structure has been created to drive the development done around the platform. A roadmap has been made available and is reachable on the DEPLOY website (<http://www.event-b.org/roadmap.html>). External stakeholders are invited to contribute to the development of the platform, as identified in the roadmap.

Newsletter. DEPLOY publishes a newsletter every 6 months, providing a clear view on:

- what is going on in the project,
- what its current status is, and
- what are the next steps.

All WPs are contributing to the newsletter, which is sent to persons having registered on the website (41 so far). All issues are archived on the website and can be downloaded anonymously. Newsletter #1 was released in July 2008. Newsletter #2 will be released in January 2009.

Project brochure. A leaflet, presenting the project, was created at the beginning of the project and is now distributed at most conferences attended by DEPLOY partners.

Training materials. In relation with WP10 Technology Transfer, teaching material including:

- tutorials,
- large examples, entirely loaded on the platform, accompanied by extensive explanations

are available to the community, targeting practitioners (engineers, etc), teachers, researchers, etc. through the DEPLOY publications website:

- Abrial, Jean-Raymond and Hoang, Thai Son and Schmalz, Matthias (2008) [Deliverable D8 D10.1 "Teaching Materials" --- Exercises.](#) [DEPLOY Deliverable]
- Abrial, Jean-Raymond and Hoang, Thai Son and Schmalz, Matthias (2008) [Deliverable D8 D10.1 "Teaching Materials" --- Lecture Materials.](#) [DEPLOY Deliverable]
- Abrial, Jean-Raymond and Hoang, Thai Son and Schmalz, Matthias (2008) [Deliverable D8 D10.1 "Teaching Materials" --- Rodin Platform Archives.](#) [DEPLOY Deliverable]
- Abrial, Jean-Raymond and Hoang, Thai Son and Schmalz, Matthias (2008) [Deliverable D8 D10.1 "Teaching Materials" --- Summary Materials.](#) [DEPLOY Deliverable]
- Abrial, Jean-Raymond and Metayer, Christophe and Voisin, Laurent (2007) [Rodin Manual and Language Definition.](#) Manual. RODIN Project. (Unpublished)

2.4 Collaboration with ICT SSAI&E projects:

DEPLOY sets up co-operation activities with other ICT project under the WP2007/2008 objective “Service and Software Architectures, Infrastructure and Engineering”, in order to exploit synergies between other projects and to increase the impact of the ICT initiative.

This topic is covered by the “Collaboration Plan” document.