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

DEPLOY Deliverable D27

D15.3 Year 2 Annual Dissemination/Exploitation Report

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Contents

1 Introduction

This document aims at reporting project achievements on dissemination and exploitation from DEPLOY during year 2. It is updated every year, completed with progress made, and delivered at months M12 (D14), M24 (D27), M36 (D37), and M48 (D52).

2 Achievements

This chapter presents DEPLOY's second 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 centred 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 expectations;
- 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 actions 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)
- Aryldo G. Russo Jr. (Acesso e Segrurança - 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)
- Gao Hongjiang (Xi'an Jitotong University, China)
- Maria Teresa Llano Rodriguez (Heriot-Watt University, UK)
- Hironobu Kuruma (National Institute of Informatics, Japan)
- Hrvoje Belani (University of Zagreb, Croatia)
- Camilo Rueda (Universidad Javeriana-Cali, Colombia)
- Paul Simon (Individual - France)
- Bruno Gomes (Federal University of Rio Grande do Norte, Brazil)
- Gudmund Grov (Heriot-Watt University - United Kingdom)
- Simon Hudon (ETH Zürich - Suisse)
- Xinben Li (Zhejiang Wanli Univ. - China)
- Bo Liu (University of Southampton - UK)
- M. Sushil - Lecturer
- Merwyn Monteiro (University of New South Wale - Australia)
- Rod Chapman (Praxis - UK)
- Marcel Verhoef (Chess - NL)
- Divakar Yadav (U P Technical University - India)
- Ait-Sadoune (LISI/ENSMA - France)
- Kenyu Yamada
- Ruchika - Lecturer
- Stéphane Badreau (Capgemini - France)
- Denis Grotsev (Kazakh National University - Kazakhstan)
- Abderrahman Matoussi (LACL Paris 12 - France)
- Dave Nuttall (MBDA Systems)
- Atif Mashkoor (Nancy University - France)
- Luke Wildman (WRSA, RAMS - Australia)
- Stephen Wright (University of Bristol - UK)
- Mahdi El Masaoudi (Sherbrooke University - Canada)
- Frederic Gervais (Université Paris-Est - Paris)
- Benjamin Aziz (STFC Rutherford Appleton Laboratory - UK)
- Peter H. Schmitt (KIT - Germany)
- Arun Kumar Singh (Uttar Pradesh Technical University - India)
- Bulent Gumus (TOBB ETU - Turkey)
- Martin de Groot (CSIRO - Australia)
- Jonathan Ostroff (York University - Canada)

- M. Rakesh (Waterford - Ireland)

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.

For the time being, 50 answers have been collected, indicating that the typical user is from academia, working on Windows and doing research with Rodin.

2.2 DEPLOY Associates

The DEPLOY Associates (*DAs*) is a group created late 2009, gathering privileged industrial experimenters of the DEPLOY tools and methodology. The main goal of this group is to ensure broad dissemination of the results of the project (tools, methodology, documents, etc.) by:

- experimenting on new case-studies, possibly from domains not yet addressed by the DEPLOY project
- ensuring that adequate training is delivered to the *DA* personnel in charge of the case-study, in order to obtain comparable results among *DAs*
- collecting feedback (metrics, models, conclusions, etc.) from *DA*, in order to improve project deliverables and to demonstrate the extent to which they are applicable to industry.

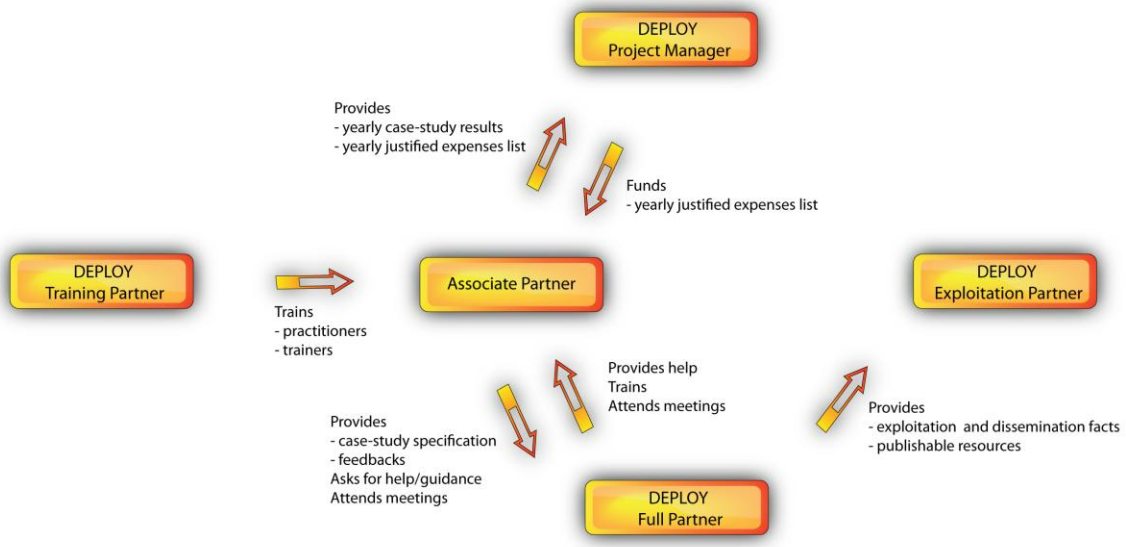


Figure 1: relationships between DEPLOY partners and associates

The DEPLOY Associates receive specific and dedicated help from the DEPLOY project (training, consultancy, etc.).

Two DEPLOY Associates have been selected so far:

- **Automação E Systémas** – Sao Paulo (Brazil). AeS is a Brazilian company, developing embedded systems, especially in the railways field. As a DA, AeS plans to assess DEPLOY tools and method on a "dead man control" system. The complete development cycle will be covered, with the objective of reaching Safety Integrity Level 3 compliancy.

- **Critical Software Technologies** – Southampton (U.K.). CST is an English company operating across different industry sectors (space, defense, transport and aeronautics). CST plans to develop two embedded software with DEPLOY tools (satellite onboard software and avionics software).

2.3 Events

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

Date	Location	Title
February 16th 2009	Düsseldorf (Germany)	IFM2009. One-day special event organized by the "working group on Formal Methods for SOA and Internet of the future". Two papers presented: - Decomposition structures for Event-B - Class and State machine refinement in UML-B
May 14-15th 2009	Toulouse (France)	12th European Workshop on Dependable Computing (EWDC 2009). Presentation of DEPLOY work on
July 16-17th 2009	Southampton (UK)	Rodin User and Developer Workshop
September 1-4th 2009	Paraiba (Brazil)	4th Latin-American Symposium on Dependable Computing. Presentation on Structuring Specifications with Modes
September 13-18th 2009	Dagstuhl (Germany)	DEPLOY was heavily involved in the seminar "Refinement based methods for the construction of dependable systems"
November 2-6th 2009	Eindhoven (Netherlands)	FM 2009. - Organization of the workshop "Recent Innovations and Applications in B" - Industry Day: presentation of experiences in the development and application of rodin/event-B - Tutorial on rely/guarantee-thinking - Formal Methods for Components and Objects: DEPLOY session with 3 invited presentations
December 9-12th 2009	Rio de Janeiro (Brazil)	ICFEM 09: recent work in the project on modal systems: specification, refinement, and realisation

DEPLOY was heavily involved in the Dagstuhl Workshop. 43 persons attended the workshop, from both academia and industry, aimed at sharing industrial experience on developing dependable systems and providing valuable inputs to researchers for future work.

The RODIN User and Developer Workshop gathered 63 persons, attending the 28 talks of the workshop:

- *System Modelling and Design: Refining Software Engineering* – K. Robinson
- *Doing Mathematics with the Rodin Platform* – J.-R. Abrial
- *Experiences with a Quite Big Event-B Model* – S. Wright
- *On Proving with Event-B that a Pipelined Processor Model Implements its ISA Specification* – J. Colley
- *Quantitative Design Decisions Measurement using Formal Method* – F. Yuan
- *An Experiment in Applying Event-B and Rodin to a Flash-Based Filestore* – K. Damchoom and M. Butler
- *A Theory of Finite Sets, Lists, and Maps for the SMT-Lib Standard* – P. Ruemmer
- *Better automated theorem proving in Event-B* – M. Schmalz
- *Proposal for an extensible rule-based prover for Event-B* – I. Maamria
- *A Proposal for a Rodin Proof Planner & Reasoned Modelling Plug-in* – G. Grov
- *Using and Extending ProB* – J. Bendisposto
- *Towards the SAL plugin for the Rodin platform* – I. Lopatkin
- *An Overview of Overture* – K. Lausdahl and M. Ferreira
- *Roadmap for the Rodin Tool* – M. Butler
- *Formal Methods Outside the Mother Land* – A. Russo Jr.,
- *Systems Evolution via Animation and Reasoning* – M. T. Llano
- *BRANIMATION* – A. Mashkoor
- *A Framework for Code Generation and Scheduling of Event-B Models* – F. Degerlund and R. Grönblom
- *Code Generation from Event-B - Using an Intermediate Specification Notation* – A. Edmunds
- *On Event-B and Control Flow* – A. Iliasov
- *Requirements Traceability* – M. Jastram
- *A Rodin plugin for quantitative timed models* – J. Rehm
- *Composition, Renaming and Generic Instantiation in Event-B Development* – R. Silva
- *Expressing KAOS Goal Refinement Patterns with Event-B* – A. Matoussi
- *A tool for specifying and validating software responsibility* – E. Mazza
- *Language and Tool Support for Class and State Machine Refinement in UML-B* – M. Y. Said
- *An EMF Framework for Event-B* – C. Snook
- *Using CSP Refusal Specifications to Ensure Event-B Refinement* – J. Sharp

At the occasion of the RIAB workshop, several presentations were given by DEPLOY and DIG members:

- *Event B recipes for proof based design of distributed systems* - D. Méry, LORIA
- *A proved "correct by construction" realistic digital circuit* - M. Benveniste, STMicroelectronics
- *ProB for validating large scale railways models* - M. Leuschel, University of Düsseldorf
- *Automatic refinement and code generation: lessons learned* - T. Lecomte, ClearsSy
- *The Rodin platform: latest and future additions* - M. Butler, University of Southampton
- *Event-B in space-or are we still on the ground ?* - D. Ilic, Space Systems Finland
- *Formal development of enterprise service communication* - A. Roth, SAP
- *Formal methods outside the mother land* - A. Russo, AeS Group
- *Probabilities in event-B for railways safety critical systems* - J. Falampin, Siemens TS
- *The cruise control as a pilot application* - M. Jastram, University of Düsseldorf
- *Formal modeling feedback on train tracking* - M. Clabaut, Systerel

The plans for 2010 are to organize a workshop for Rodin users and developers in Düsseldorf, and two dissemination workshops:

- **B Dissemination Day workshop** *(Tokyo, 17 March 2010)*

This workshop, satellite event of the GRACE International Symposium on Advanced Software Engineering, held in Tokyo, aims at providing a clear picture of B/Event-B current status of development and exploitation, focusing on the support tools as well as the industrial applications. The workshop includes a large number of presentations given by the DEPLOY project members or associated to the project results. Target audience is software/system engineers and project managers, as well as researchers in the domain.

Related link: http://events.grace-center.jp/symposium/2010en/workshop_tclearsy

- **Workshop on B Dissemination** *(Natal, Brazil, 8-9 November 2010)*

This workshop, satellite event of the SBMF 2010 conference, held in Natal (Brazil), is organized within the framework of the DEPLOY project. Its objectives are to present current status, ongoing research and development related to B and event B languages, as well as applications to industry size problems. Topics addressed by the workshop are many:

  - Tool development (language extensions, external provers, code generation, etc.)
  - Modeling challenges (real time properties, probabilistic refinement, high order logic, etc.)

- Deployment (methodology, cases-studies, return of experience, scaling up, etc.)

The workshop is intended to last 2 days:

- The first day is be devoted to DEPLOY speakers. General presentation of the project and tools together with focused talks on scientific/technical matters (modeling time, code generation, model animation, model checking, etc.) that are being researched in DEPLOY. Reports on industrial applications (space, railways, automotive, information systems, etc.) complete the day.
- The second day is open to any presenter, thru an international call for papers to appear. Expected contributions would range from theoretical research to practical applications of B/event B.

2.4 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 main 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 three 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 wiki website (http://wiki.event-b.org), providing documentation for users and developers of teh Rodin toolset.
- the developer site, hosted by sourceforge and reachable at http://rodin-b-sharp.sourceforge.net/.

Publications. The following resources (articles, etc.: the publication list is on the website) having been published in 2009 and are available on the publications website:

1. Varpaaniemi, Kimmo (2010) Event-B Project DepSatSpec015Model000. [Rodin Archive]

2. Väisänen, Pauli and Varpaaniemi, Kimmo (2010) DEPLOY Satellite (an Attitude and Orbit Control System) Specification, Version 15. Space Systems Finland Ltd. (Unpublished)
3. Väisänen, Pauli and Varpaaniemi, Kimmo (2010) DEPLOY Satellite (an Attitude and Orbit Control System) Specification, Version 15 without statement numbering. Space Systems Finland Ltd. (Unpublished)
4. Abrial, Jean-Raymond and Butler, Michael and Joshi, Rajev and Troubitsyna, Elena and Woodcock, Jim C. P. (2010) 09381 Extended Abstracts Collection — Refinement Based Methods for the Construction of Dependable Systems. Dagstuhl Seminar Proceedings, 09381 (09381). Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik, Germany.
5. Iliasov, Alexei and Troubitsyna, Elena and Laibinis, Linas and Romanovsky, Alexander and Varpaaniemi, Kimmo and Ilic, Dubravka and Latvala, Timo (2010) Supporting Reuse in Event B Development: Modularisation Approach. In: Abstract State Machines (ASM), Alloy, B and Z Conference (ABZ 2010), February 22-25, 2010, Orford, Québec, Canada.
6. Laibinis, Linas and Troubitsyna, Elena (2009) Event-B Project Modes_v2. [Rodin Archive]
7. Wright, Stephen (2009) PhD Thesis: Formal Construction of Instruction Set Architectures. [DEPLOY Interest Group Item] (Unpublished)
8. Kozyura, Vitaly and Roth, Andreas and Wei, Wei (2009) Local Enforceability and Inconsumable Messages in Choreography Models. In: Proceedings of 4th South-East European Workshop on Formal Methods (SEEFM'09).
9. Bicarregui, J. C. and Fitzgerald, J. S. and Larsen, P. G. and Woodcock, J. C. P. (2009) Industrial Practice in Formal Methods: a Review. FM 2009: Formal Methods, LNCS 5 . (In Press)
10. Delandtsheer, Renaud and Ponsard, Christophe (2009) Goal-Oriented Requirements Engineering in Action in the Transportation Sector. Technical Report. DEPLOY. (Unpublished)
11. Russo Jr, Aryldo G (2009) Formal Methods in Industry: The State of Practice of Formal Methods in South America and Far East. [DEPLOY Associate Item] (Submitted)
12. Iliasov, Alexei and Dotti, Fernando and Romanovsky, Alexander (2009) Structuring Specifications with Modes. In: Fourth Latin-American Symposium on Dependable Computing (LADC), September 1-4, 2009, Brazil.
13. Butler, Michael and Hallerstede, Stefan and Voisin, Laurent (2009) Rodin User and Developer Workshop 2009 - Extended Abstracts. Technical Report. DEPLOY Project. (Unpublished)
14. Samia, Mireille and Leuschel, Michael (2009) Pie Tree Visualization. In: Proceedings SEKE 2009. Knowledge Systems Institute Graduate School, pp. 400-405.

15. Wright, Stephen (2009) MIDAS: A Formally Constructed Virtual Machine. [DEPLOY Interest Group Item] (Unpublished)
16. Iliasov, Alexei and Troubitsyna, Elena and Laibinis, Linas and Romanovsky, Alexander (2009) Towards Automated Refinement: Patterns in Event B. Working Paper. Technical Report. (Unpublished)
17. Ilic, Dubravka and Varpaaniemi, Kimmo (2009) Event-B Project BepiColombo_Models_v5.0. [Rodin Archive]
18. Butler, Michael (2009) Using Event-B Refinement to Verify a Control Strategy. Working Paper. ECS, University of Southampton. (Unpublished)
19. Laibinis, Linas and Troubitsyna, Elena and Iliasov, Alexei and Romanovsky, Alexander (2009) Fault Tolerant Middleware for Agent Systems: A Refinement Approach. In: 12th European Workshop on Dependable Computing (EWDC 2009), 14-15 May 2009, Toulouse, France)
20. Aziz, Benjamin and Arenas, Alvaro and Bicarregui, Juan and Ponsard, Christophe and Massonet, Philippe (2009) From Goal-Oriented Requirements to Event-B Specifications. In: First Nasa Formal Method Symposium, April 6 - 8, 2009 , Moffett Field, California . (In Press)
21. Abrial, Jean-Raymond (2009) Event Model Decomposition. Technical Report. ETH Zurich. (Unpublished)
22. Said, Mar Yah and Butler, Michael and Snook, Colin (2009) Language and Tool Support for Class and State Machine Refinement in UML-B. [Rodin Archive]
23. Butler, Michael (2009) Decomposition Structures for Event-B. In: Integrated Formal Methods iFM2009. (In Press)
24. Butler, Michael (2009) Towards a Cookbook for Modelling and Refinement of Control Problems. Working Paper. ECS, University of Southampton. (Unpublished)
25. Hoang, Thai Son and Basin, David and Kuruma, Hironobu and Abrial, Jean-Raymond (2009) Development of a Network Topology Discovery Algorithm. [Rodin Archive]
26. Capozucca, Alfredo and Guelfi, Nicolas and Pelliccione, Patrizio and Romanovsky, Alexander and Zorzo, Avelino (2009) Frameworks for designing and implementing dependable systems using Coordinated Atomic Actions: A comparative study. Journal of Systems and Software, 82 . pp. 207-228.
27. Abrial, Jean-Raymond and Butler, Michael and Hallerstede, Stefan and Hoang, Thai Son and Mehta, Farhad and Voisin, Laurent (2009) Rodin: An Open Toolset for Modelling and Reasoning in Event-B. Technical Report. DEPLOY Project. (Unpublished)
28. Abrial, Jean-Raymond and Metayer, Christophe and Voisin, Laurent (2009) Rodin Manual and Language Definition. Manual. RODIN Project. (Unpublished)

29. Bryans, Jeremy W. and Fitzgerald, John S. and Romanovsky, Alexander and Roth, Andreas (2009) Formal Modelling and Analysis of Business Information Applications with Fault Tolerant Middleware. Proceedings 14th IEEE International Conference on Engineering of Complex Computer Systems ICECCS 2009. . pp. 68-77.

30. Bundy, Alan and Grov, Gudmund and Jones, Cliff B (2009) An outline of a proposed system that learns from experts how to discharge proof obligations automatically. In: Dagstuhl seminar on Refinement Based Methods for the Construction of Dependable Systems, 14-18 Sept. 2009, Schloss Dagstuhl. (In Press)

31. Bundy, Alan and Grov, Gudmund and Jones, Cliff B (2009) Learning from experts to aid the automation of proof search. In: 9th International Workshop on Automated Verification of Critical Systems: AVoCS 2009. (In Press)

32. Butler, Michael (2009) Bosch switch mini-pilot. [Rodin Archive]

33. Butler, Michael and Jones, Cliff B and Romanovsky, Alexander and Troubitsyna, Elena (2009) Methods, Models and Tools for Fault Tolerance. LNCS, 5454 . Springer.

34. Castor Filho, Fernando and Romanovsky, Alexander and Rubira, Cecilia (2009) Improving reliability of cooperative concurrent systems with exception flow analysis. The Journal of Systems and Software, 82 . pp. 874-890.

35. Dotti, Fernando and Iliasov, Alexei and Riberiro, Leila and Romanovsky, Alexander (2009) Modal Systems: Specification, Refinement and Realisation. In: International Conference on Formal Engineering Methods - ICFEM 09 , December 9 -12, 2009, Rio de Janeiro, Brazil.

36. Edmunds, Andrew and Butler, Michael (2009) A Code Generation Example for Event-B: A Shared Channel with Concurrent Read/Writers. University of Southampton. (Unpublished)

37. Iliasov, Alexei (2009) On Event-B and Control Flow. DEPLOY Project. (Unpublished)

38. Iliasov, Alexei and Arief, Budi and Romanovsky, Alexander (2009) Step-wise Development of Resilient Ambient Campus Scenarios. In: Methods, Models and Tools for Fault Tolerance. Springer, pp. 304-330.

39. Jones, Cliff B (2009) Abstraction is all we've got: auxiliary variables considered harmful. In: Dagstuhl seminar on Refinement Based Methods for the Construction of Dependable Systems, 14-18 Sept. 2009, Dagstuhl. (In Press)

40. Jones, Cliff B (2009) From problem frames to HJJ. In: Festschrift for Michael Jackson. Lulu Press. (In Press)

41. Jones, Cliff B (2009) The role of auxiliary variables in the formal development of concurrent programs. Technical Report. Newcastle University , Newcastle upon Tyne .

42. Jones, Cliff B and Pierce, Ken G (2009) Elucidating concurrent algorithms via layers of abstraction and reification. Technical Report. Newcastle University , Newcastle upon Tyne .

43. Plagge, Daniel and Leuschel, Michael and Lopatkin, Ilya and Iliasov, Alexei and Romanovsky, Alexander (2009) SAL, Kodkod, and BDDs for Validation of B Models. Lessons and Outlook. In: AFM09 (Automated Formal Methods), 27 June 2009, Grenoble, France. (In Press)

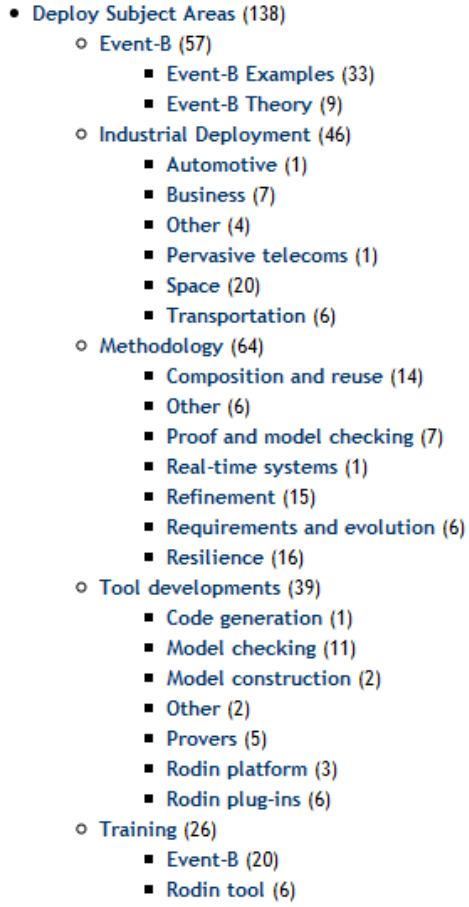
44. Schmalz, Matthias and Varacca, Daniele and Völzer, Hagen (2009) Counterexamples in Probabilistic LTL Model Checking for Markov Chains. In: Concur.

45. Wieczorek, S. and Kozyura, V. and Roth, A. and Leuschel, Michael and Bendisposto, Jens and Plagge, Daniel and Schieferdecker, I. (2009) Applying Model Checking to Generate Model-based Integration Tests from Choreography Models. 21st IFIP Int. Conference on Testing of Communicating Systems and the 9th Int. Workshop on Formal Approaches to Testing of Software TESTCOM/FATES 2009 . (In Press)

46. Wieczorek, S. and Roth, A. and Stefanescu, A. and Kozyura, V. and Charfi, A. and Kraft, F. M. and Schieferdecker, I. (2009) Viewpoints for Modeling Choreographies in Service-Oriented Architectures. Joint Working IEEE/IFIP Conference on Software Architecture 2009 & European Conference on Software Architecture 2009 . (In Press)

47. Woodcock, Jim and Larsen, Peter Gorm and Bicarregui, Juan and Fitzgerald, John S. (2009) Formal Methods: Practice and Experience. ACM Computing Surveys, 41 (4). pp. 1-36.

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:



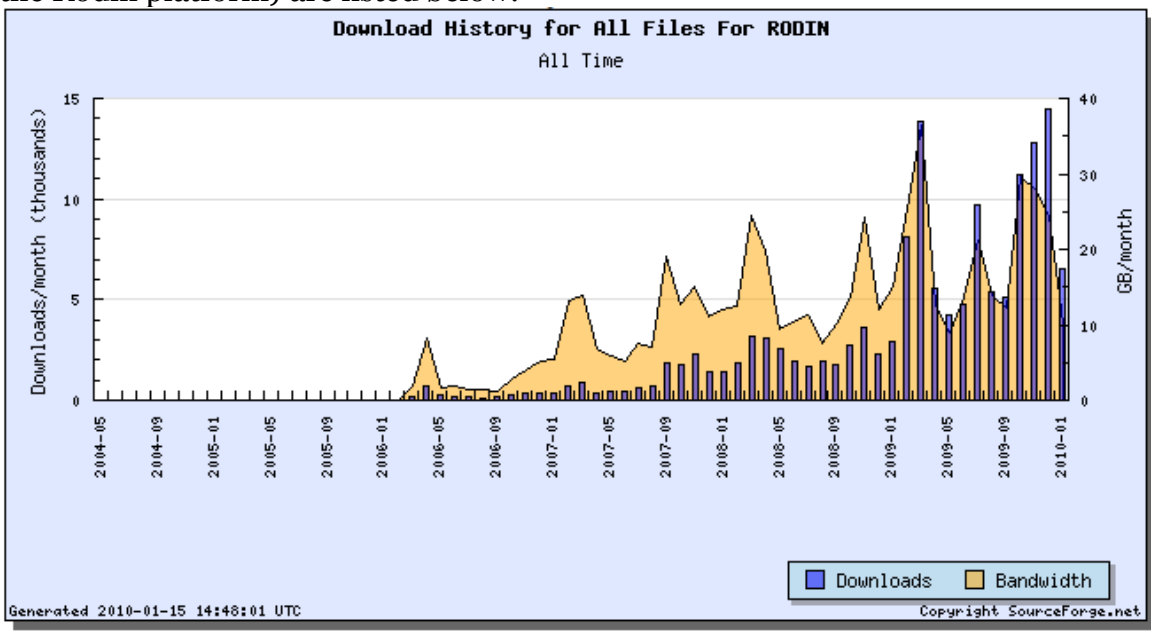
Metrics. Statistics are collected in the project to evaluate the Rodin platform and the DEPLOY project's popularity. The measurement of DEPLOY websites hits from foreign IP addresses will provide an estimate of the awareness and the interest concerning DEPLOY in both the industry and academic worlds. 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 24 months of the project):

	01	02	03	04	05	06	07	08	09	10	11	12
Publications	62	383	359	410	411	364	N/A	N/A	N/A	N/A	N/A	N/A
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
	13	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Publications	1592	803	940	871	827	748	826	852	1010	1117	1059	919
Event-B.org	756	763	1102	839	795	750	887	631	765	939	968	850
Wiki Event-B.org	1326	1470	1979	1577	1543	1198	1565	1340	1609	1728	1702	1654
Deploy-project.eu	4698	4375	4703	4012	4436	4733	5474	4493	5240	6492	6576	6078

Sourceforge statistics (number of downloads for all files, since the beginning of the Rodin platform) are listed below:



The platform has been downloaded 5 400 times, as follows:

		Version								
		0.8.0	0.8.1	0.8.2	0.9.0	0.9.1	0.9.2	0.9.2.1	1.0	1.1
Operating System	Windows	172	314	408	408	191	142	640	308	522
	MacOS	26	44	142	142	70	58	148	86	89
	Linux	114	142	220	220	84	60	312	169	169
	Total	***312***	***500***	***770***	***770***	***345***	***260***	***1100***	***563***	***780***

Platform exploitation. A coordination structure, the *Rodin committee*, has been created to drive the development done around the platform. This structure, led by M. Butler, gathers several partners of the project and is aimed at preparing the end of the project, with the creation, by Systerel, of a non-for-profit organization .
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.
A dedicated workshop was organized in July 2009, aimed at provided support to external developers. A one day–tutorial was set up at that occasion. A similar workshop will be organized in 2010 at Düsseldorf.

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 (45 so far). All issues are archived on the website and can be downloaded anonymously. Newsletter #2 and # were released resp. in January 2009 and July 2009. Newsletter #4 will be released in January 2010.

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.

New resources made available during 2009 are:

- Butler, Michael (2009) *Towards a Cookbook for Modelling and Refinement of Control Problems.* Working Paper. ECS, University of Southampton.
- Abrial, Jean-Raymond and Metayer, Christophe and Voisin, Laurent (2009) *Rodin Manual and Language Definition.* Manual. RODIN Project.
- Abrial, Jean-Raymond *A Mechanical Press Controller.*
- Abrial, Jean-Raymond *Concurrent Program Development.*
- Abrial, Jean-Raymond *Controlling Cars on a Bridge.*
- Abrial, Jean-Raymond *Electronic Circuits Development.*
- Abrial, Jean-Raymond *File Transfer Protocol.*
- Abrial, Jean-Raymond *Introduction.*
- Abrial, Jean-Raymond *Leader Election on a Ring-shaped Network.*
- Abrial, Jean-Raymond *Location Access Controller.*
- Abrial, Jean-Raymond *Routing Algorithm for Mobile Agent.*
- Abrial, Jean-Raymond *Sequential Program Development.*
- Abrial, Jean-Raymond *Synchronizing Processes on a Tree Network.*
- Abrial, Jean-Raymond *The Bounded Re-transmission Protocol.*
- Abrial, Jean-Raymond *The Leader Election Protocol (IEEE1394).*
- Abrial, Jean-Raymond *Train System.*

2.5 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.