

Axel LEGAY

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Born 23th of March 1980.  
Verviers (Belgium)  
Belgian  
Single

## 1 Current situation

Belgian citizen currently working at Inria Rennes. I am a member of the evaluation committee at Inria (responsible for the evaluation of the research of the entire center). I am responsible of Tamis, a new team on cyber-security. This team will be the research team of the Inria high security lab in collaboration with the “pole d’excellence cyber”. I have international experience in formal verification and validation.

## 2 Education and employment

— 2015 : Habilitation à diriger des recherches, *Université de Rennes 1*, France

Thesis : *Contributions to Statistical Model Checking.*

— 2015 – : Part time Professor (and winner of Velux visiting Professor Prize), Aalborg University, Denmark.

— 2013–2015 : Part time Reader at Royal Holloway University of London, Grande-Bretagne.

— 2011 – 2013 : Part time associate Professor, Aalborg University, Denmark.

— 2011 – Present : Full-time researcher (CR1), IRISA/INRIA Rennes, France.

— 2009 – 2010 : Full-time researcher (CR2), IRISA/INRIA Rennes, France.

— 2008–2011 : Associate Researcher, Facultes Notre Dame de la Paix Namur, Belgium.

— 2008–2011 : Associate Researcher, University of Liege, Belgium.

— 2008– 2009 : Post-doctoral researcher at Carnegie Mellon University, USA.

Fellow of the **Belgian American Educational Foundation.**

— 2003–2007 : PhD student, *University of Liege*, Belgium.

Thesis : *Generic Techniques for the Verification of Infinite-State Systems*

— 2002–2003 : Researcher, *University of Liege*, Belgium.

Thesis : *Iterating Transducers : from experiments to concepts and algorithms*

- 1998–2002 : Master in Computer Science, *University of Liege*, Belgium.

### 3 Programming Languages and computer skills

- Java, C, C++, Basic, .Net
- Windows, Linux, Unix

### 4 Positions held as a visiting researcher

Multiples one week visits in Aalborg, Paris, Namur, Nasa, and Grenoble. Here are other visits.

- Universite Paris 7 France : May 2003 and October 2004 (2 months).
- Uppsala University Sweden : November 2003 and December 2003 (2 months).
- Santa Cruz University, USA : From May 2005 to October 2005 (6 months).
- Twente University, Netherlands : May 2006 (1 month).
- Oxford University, England : From June 2006 to August 2006 (3 months).
- Aalborg University, Denmark : May 2009 and Juin 2009 and November 2009 (4 weeks).
- Aalborg University, Denmark : April 2010 (1 month).
- Urbana-Champaign University, USA : From September 2010 to December 2010 (4 months)
- Rice University, USA : February 2015 (1 month).

### 5 Teaching

Multiple time invited speaker in summer/winter school, I also teach at the bachelor and master levels.

- From 2003 to 2007 : teaching assistant for “Introduction to Theoretical Computer Science” (40h per year), master level, Liege, Belgium.
- From 2003 to 2006 : teaching assistant for “Introduction to Java Programming Language” (75 hours pers year), bachelor level, Liege, Belgium.
- 2008 : teacher for “Statistics and Model Checking” (10 hours), PhD Goup at Carnegie Melon, Pittsburgh, USA.
- From 2009 to 2012 : teacher for “Introduction to Model Checking” (25h per year), master level, Rennes, France.
- From 2013 to 2014 : teacher for “Software verification” (40h per year), bachelor level, Londres, Royaume-Uni.
- Starting 2015 : teacher for “Information system analysis” (40h per year), master level, Vannes, France.

## 6 Programming languages

- Linux, Windows ;
- C, JAVA, C++, Scheme ;
- Php, SQL, Visual Studio, Eclips, visual basic, asp.net, apache (basis).

## 7 Publications

A complete and updated list of my publications is available at <http://dblp.uni-trier.de/pers/hd/1/Legay> :Axel

The authors appear in alphabetic order. All the publications are available at <http://www.montefiore.ulg.ac.be/~legay/papers/indexpubli.html>. Publications of 2015 are under press.

### 7.1 Books

I am the editor of four conference books : RV'13, FORMATS'14, HVC'13, and a book in honor of Joseph Sifakis.

### 7.2 Book Chapters

- M. Cordy, A. Classen, P. Heymans, A. Legay, P-Y. Schobbens. Model-Checking Adaptive Software with Featured Transition Systems. To be pulished in Book on Assurances for Self-Adaptive Systems. Lecture Notes in Computer Science.
- U. Fahrenberg, A. Legay and L-M. Traonouez. Specification Theories for Probabilistic and Real-Time Systems. In From Programs to Systems – The Systems Perspective in Computing, LNCS, Springer, volume 8345. To appear.
- U. Fahrenberg, K. G. Larsen, A. Legay and L-M Traonouez. Parametric and Quantitative Extensions of Modal Transition Systems. In From Programs to Systems – The Systems Perspective in Computing, LNCS, Springer, volume 8345. To appear.

### 7.3 Journals

1. P. Aziz Abdulla, A. Legay, J. d'Orso, A. Rezine. Tree Regular Model Checking : A Simulation-Based Approach. Journal of Logic and Algebraic Programming, 2006.
2. K. Chatterjee, L. de Alfaro, M. Faella, A. Legay. Qualitative Logics and Equivalences for Probabilistic Systems. Logical Methods in Computer Science, 2009.
3. F. Cantin, A. Legay, P. Wolper. Computing Convex hulls by automata iteration. International Journal of Foundations of Computer Science, 2009.
4. E. M. Clarke, A. Donze, A. Legay. On Simulation-Based Probabilistic Model Checking. Formal Methods in System Design, 2010.
5. A. Legay, P. Wolper. On (Omega-)Regular model checking. Transactions on Computational Logic, 2010.

6. J-B. Raclet, E. Badouel, A. Benveniste, B. Caillaud, A. Legay, R. Passerone. Modal Interfaces : Unifying Interface Automata and Modal Specifications. *Fundamenta Informaticae*, 2011.
7. B. Delahaye, B. Caillaud, A. Legay. Probabilistic Contracts : A Compositional Reasoning Methodology for the Design of Systems with Stochastic and/or non-Deterministic Aspects. *Formal Methods in System Design*, 2011.
8. N. Bertrand, A. Legay, J-B. Raclet, Sophie Pinchinat. Modal event-clock specifications for timed component-based design. *Science of computer Programming*, 2011.
9. A. Basu, S. Bensalem, M. Bozga, B. Delahaye, A. Legay. Statistical Abstraction and Model Checking of Large Heterogeneous Systems. *Software Tools for Technology Transfer*, 2011.
10. B. Caillaud, B. Delahaye, K. Larsen, A. Legay, M. Pedersen, A. Wasowski. Constraint Markov Chains. *Journal of Theoretical Computer Science*, 2011.
11. A. Legay. Extrapolating (Omega-)Regular Model Checking. *Software Tools for Technology Transfer*, 2011.
12. B. Delahaye, K. G. Larsen, A. Legay, M. L. Peddersen, A. Wasowski. Consistency and Refinement for Interval Markov Chains. *Journal of Logic and Algebraic Programming*, 2011.
13. L. Bozzelli, A. Legay, S. Pinchinat. Hardness of preorder checking for basic formalisms. *Journal of Theoretical Computer Science*, 2011.
14. S. Bauer, L. Juhl, K. Larsen, A. Legay, J. Srba. Extending Modal Transition Systems with Structured Labels. *MFCs*, 2011.
15. B. Delahaye, K. G. Larsen, A. Legay, M. L. Peddersen, A. Wasowski. New results for Constraint Markov Chains. *Performance evaluation*, 2012.
16. L. Bozzelli, A. Legay, S. Pinchinat. On Timed Alternating Simulation for Concurrent Timed Games. *Acta Informatica*, 2012.
17. A. Classens, M. Cordy, P. Heymans, A. Legay, P-Y Schobbens. Model Checking Software Product Lines with SNIP. *STTT*, 2012.
18. A. David, K.G. Larsen, A. Legay, M. Moller, A.P. Ravn, A. Skou, A. Wasowski. Compositional Verification of Real-Time Systems Using Ecdar. *STTT*, 2012.
19. S. Bauer, L. Juhl, K.G. Larsen, A. Legay, C. Thrane. Weighted Modal Transition Systems. *Formal Methods in Systems Design*, 2013.
20. B. Aminof, A. Legay, N. Murano, O. Serre, M. Vardi. Pushdown Module Checking with Imperfect Information. *Information and Computation*, 2013.
21. A. Classen, P. Heymans, A. Legay, J-F. Raskin, and P-Y. Schobbens. Featured Transition Systems : Foundations for Verifying Variability-Intensive Systems and their Application to LTL Model Checking. *Transaction on Software Engineering*.
22. S. Bensalem, A. Legay, M. Bozga : Rigorous embedded design : challenges and perspectives. *Software and Tools for Technology Transfer* 15(3) : 149-154 (2013).

23. K. G. Larsen, A. Legay, L-Marie Traonouez, A. Wasowski : Robust synthesis for real-time systems. *Theor. Comput. Sci.* 515 : 96-122 (2014).
24. B. Delahaye, J-P. Katoen, K. G. Larsen, A. Legay, M. Pedersen, F. Sher, Andrzej Wasowski. *Abstract Probabilistic Automata*. *Information and Computation* 66-116, 2013.
25. S.S. Bauer, U. Fahrenberg, L. Juhl, K. G. Larsen, A. Legay, C. R. Thrane : Weighted modal transition systems. *Formal Methods in System Design* 42(2) : 193-220 (2013).
26. B. Delahaye, K. G. Larsen, A. Legay : Stuttering for Abstract Probabilistic Automata. *J. Log. Algebr. Program.* 83(1) : 1-19 (2014).
27. U. Fahrenberg and A. Legay : General Quantitative Specification Theories with Modal Transition Systems. *Acta Informatica*. To appear.
28. X. Allamigeon, U. Fahrenberg, S. Gaubert, R. D. Katz, A. Legay : Tropical Fourier-Motzkin elimination, with an application to real-time verification. *IJAC* 24(5) : 569-608 (2014)
29. U. Fahrenberg and A. Legay : The Quantitative Linear-Time–Branching-Time Spectrum. *Theoretical Computer Science*. To appear.
30. A. David, K. G. Larsen, A. Legay, U. Nyman , L-M. Traonouez and. Wasowski. Real-time specifications. In *Software Tools for Technology Transfer*. To appear.
31. U. Fahrenberg, A. Legay : General quantitative specification theories with modal transition systems. *Acta Inf.* 51(5) : 261-295 (2014).
32. S. S. Bauer, R. Hennicker, A. Legay : A meta-theory for component interfaces with contracts on ports. *Sci. Comput. Program.* 91 : 70-89 (2014).
33. K. G. Larsen, A. Legay, L-M Traonouez, A. Wasowski : Robust synthesis for real-time systems. *Theor. Comput. Sci.* 515 : 96-122 (2014).
34. L. Palopoli et al. Navigation assistance and guidance of older adults across complex public spaces : the DALi approach. *Intelligent Service Robotics* 8(2) : 77-92 (2015).
35. A. David, K. G. Larsen, A. Legay, U. Nyman, L-M. Traonouez, Andrzej Wasowski : Real-time specifications. *STTT* 17(1) : 17-45 (2015).
36. A. Colombo, D. Fontanelli, A. Legay, L. Palopoli, S. Sedwards : Efficient customisable dynamic motion planning for assistive robots in complex human environments. *JAISE* 7(5) : 617-634 (2015).
37. A. Nouri, S. Bensalem, M. Bozga, B. Delahaye, C/ Jegourel, A. Legay : Statistical model checking QoS properties of systems with SBIP. *STTT* 17(2) : 171-185 (2015).
38. A. David, K. G. Larsen, A. Legay, M. Mikucionis : Schedulability of Herschel revisited using statistical model checking. *STTT* 17(2) : 187-199 (2015).
39. A. David, K. G. Larsen, A. Legay, M. Mikucionis, D. Poulsen, S. Sedwards : Statistical model checking for biological systems. *STTT* 17(3) : 351-367 (2015).
40. A. Legay, M. Viswanathan : Statistical model checking : challenges and perspectives. *STTT* 17(4) : 369-376 (2015).

41. A. David, K. G. Larsen, A. Legay, M. Mikucionis, D. Poulsen : Uppaal SMC tutorial. *STTT* 17(4) : 397-415 (2015).
42. P. D'Argenio, A. Legay, S. Sedwards, L-M. Traonouez : Smart sampling for lightweight verification of Markov decision processes. *STTT* 17(4) : 469-484 (2015).
43. J. Bosco Ferreira Filho, O. Barais, M. Acher, J. Le Noir, A. Legay, B. Baudry : Generating counterexamples of model-based software product lines. *STTT* 17(5) : 585-600 (2015).
44. F. Biondi, A. Legay, P. Malacaria, A. Wasowski : Quantifying information leakage of randomized protocols. *Theor. Comput. Sci.* 597 : 62-87 (2015).
45. Axel Legay, Louis-Marie Traonouez : Statistical Model Checking with Change Detection. *T. Foundations for Mastering Change 1* : 157-179 (2016).
46. Thi Thieu Hoa Le, Roberto Passerone, Ulrich Fahrenberg, Axel Legay : A tag contract framework for modeling heterogeneous systems. *Sci. Comput. Program.* 115-116 : 225-246 (2016).
47. Jin Hyun Kim, Axel Legay, Louis-Marie Traonouez, Abdeldjalil Boudjadar, Ulrik Nyman, Kim G. Larsen, Insup Lee, Jin-Young Choi : Optimizing the resource requirements of hierarchical scheduling systems. *SIGBED Review* 13(3) : 41-48 (2016).
48. Saddek Bensalem, Marius Bozga, Axel Legay, Thanh-Hung Nguyen, Joseph Sifakis, Rongjie Yan : Component-based verification using incremental design and invariants. *Software and System Modeling* 15(2) : 427-451 (2016).
49. Cyrille Jégourel, Axel Legay, Sean Sedwards : Command-based importance sampling for statistical model checking. *Theor. Comput. Sci.* 649 : 1-24 (2016).
50. Ayoub Nouri, Marius Bozga, Anca Molnos, Axel Legay, Saddek Bensalem : ASTROLABE : A Rigorous Approach for System-Level Performance Modeling and Analysis. *ACM Trans. Embedded Comput. Syst.* 15(2) : 31 (2016).
51. Thi Thieu Hoa Le, Roberto Passerone, Uli Fahrenberg, Axel Legay : Contract-Based Requirement Modularization via Synthesis of Correct Decompositions. *ACM Trans. Embedded Comput. Syst.* 15(2) : 33 (2016).

## 7.4 Conferences

1. B. Boigelot, A. Legay, P. Wolper. Iterating Transducers in the Large. Proc. 15th International Conference on Computer-Aided Verification, Lecture Notes in Computer Science, Boulder, July 2003.
2. B. Boigelot, A. Legay, P. Wolper. Omega-regular Model Checking. Proc. 10th International Conference on Tools and Algorithms for the Construction and Analysis of Systems, Lecture Notes in Computer Science, Barcelona, April 2004.
3. P. Aziz Abdulla, A. Legay, J. d'Orso, A. Rezine. Simulation-Based Iteration of Tree Transducers. Proc. 11th International Conference on Tools and Algorithms for the Construction and Analysis of Systems, Lecture Notes in Computer Science, Edinburgh, April 2005.
4. L. de Alfaro, L. Dias da Silva, M. Faella, A. Legay, P. Roy, M. Sorea. Sociable Interfaces. Proc. 5th International Workshop on Frontiers of Combining Systems, Lecture Notes in Computer Science, Vienna,

September 2005.

5. B. Thomas Adler, L. de Alfaro, L. Dias Da Silva, M. Faella, A. Legay, V. Raman, P. Roy. Ticc : A Tool for Interface Compatibility and Composition. Proc. 18th International Conference on Computer-Aided Verification, Lecture Notes in Computer Science, Seattle, August 2006.
6. M. Faella, A. Legay. On the Implementation of a Game-Based Model for Specifying Open Systems. Proc. 10th Conference on "Approches Formelles dans l'Assistance au Developpement de Logiciels". Presses Universitaires de Namur, Namur, June 2007.
7. F. Cantin, A. Legay, P. Wolper. Computing Convex hulls by automata iteration. Proc 1th AUTOMATA 07. Palerme, June 2007.
8. Chatterjee, L. de Alfaro, M. Faella, A. Legay. Qualitative Logics and Equivalences for Probabilistic Systems. Proc. 4th International Conference on Quantitative Evaluation of Systems. IEEE. Edinburgh, September 2007.
9. A. Legay, A. Murawski, J. Ouaknine, J. Worrell. On Automated Verification of Probabilistic Programs. Proc. 14th International Conference on Tools and Algorithms for the Construction and Analysis of Systems, Lecture Notes in Computer Science, Budapest, April 2008.
10. A. Legay. T(O)RMC : a Tool for (Omega-)Regular Model Checking. Proc. 20th International Conference on Computer-Aided Verification, Lecture Notes in Computer Science, Princeton, July 2008.
11. B. Aminof, A. Legay, A. Murano. O. Serre. Mu-calculus Pushdown Module Checking with Imperfect State Information. Proc 5th IFIP International Conference on Theoretical Computer Science, Springer Science and Business Media, Milano, September 2008.
12. F. Cantin, A. Legay, P. Wolper. Computing Convex Hull by Automata Iteration. Proc 13th International Conference on Implementation and Application of Automata, Lecture Notes in Computer Science, San Fransisco, July 2008.
13. E.M. Clarke, J.R. Faeder. L.A. Harris, C.J. Langmead, A. Legay, S. K. Jha. Statistical Model Checking in BioLab : Application to the automated analysis of the T-Cell Receptor Signalling Pathway. Proc. 6th Annual Conference on Computational Methods in Systems Biology, Lecture Notes in Computer Science (Bioinformatics), Rostock, October 2008.
14. E. M. Clarke, A. Donze, A. Legay. Statistical Model Checking of Mixed-Analog Circuits with an Application to a Third Order Delta-Sigma Modulator. Proc. 3rd International Haifa Verification Conference, Lecture Notes in Computer Science, Haifa, October 2008.
15. A. Donze, G. Clermont, C. J. Langmead, A. Legay. Parameter Synthesis in Nonlinear Dynamical Systems : Application to Systems Biology, Proc. 13th Annual International Conference on Research in Computational Molecular Biology, Lecture Notes in Computer Science, Tucson, May 2009.
16. E.M. Clarke, C.J. Langmead, A. Legay, S. K. Jha, A. Platzer, P. Zuliani. A Bayesian Approach to Model Checking Biological Systems. Proc. 7th Annual Conference on Computational Methods in Systems Biology, Lecture Notes in Computer Science (Bioinformatics), Bologna, September 2009.
17. A. Legay, M. Viswanathan. Simulation + Hypothesis Testing for Model Checking of Probabilistic Systems (tutorial). Proc. 6th International Conference on Quantitative Evaluation of Systems. IEEE. Budapest, September 2009.

18. J-B. Raclet, E. Badouel, A. Benveniste, B. Caillaud, A. Legay, Roberto Passerone. Modal Interfaces : Unifying Interface Automata and Modal Specifications. Proc. 9th International Conference on Embedded Software. IEEE, Grenoble, October 2009.
19. N. Bertrand, A. Legay, J-B. Raclet, S. Pinchinat. A Compositional Approach on Modal Specifications for Timed Systems. Proc 11th International Conference on Formal Engineering Methods, Lecture Notes in Computer Science, Rio, December 2009.
20. L. Bozzelli, A. Legay, S. Pinchinat. On Timed Alternating Simulation for Concurrent Timed Games. Proc 29th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science, Kanpur, December 2009.
21. R. Chadha, A. Legay, P. Prabhakar and M. Viswanathan. Complexity bounds for the verification of real-time software. Proc 11th International Conference on Verification, Model Checking, and Abstraction Interpretation, Lecture Notes in Computer Science, Madrid, January 2010, Springer-verlag.
22. A. Classen, P. Heymans, A. Legay, J-F. Raskin, and P-Y. Schobbens. Model Checking lots of Systems : Efficient Verification of Temporal Properties in Software Product Lines. Proc 32nd International Conference on Software Engineering, ACM, Cap Town, May 2010.
23. A. David, K.G. Larsen, A. Legay, U. Nyeman, and A. Wasowski. Timed I/O Automata : A Complete Specification Theory for Real-time Systems. Proc of 13th International Conference on Hybrid Systems, ACM, Stockholm, April 2010.
24. L. Bozzelli, A. Legay, S. Pinchinat. Hardness of preorder checking for basic formalisms. Proc 16th International Conference on Logic for Programming Artificial Intelligence and Reasoning, Lecture Notes in Computer Science, Dakar, May 2010, Springer-verlag.
25. B. Delahaye, B. Caillaud, A. Legay. Probabilistic Contracts : A Compositional Reasoning Methodology for the Design of Stochastic Systems. Proc 10th International Conference on Application of Concurrency to System Design, IEEE, Braga, June 2010.
26. L. Doyen, A. Legay, D. Nickovic, T.A. Henzinger. Robustness of Sequential Circuits. Proc 10th International Conference on Application of Concurrency to System Design, IEEE, Braga, June 2010.
27. A. Basu, M. Bozga. S. Bensalem, B. Caillaud, B. Delahaye, A. Legay. Statistical Abstraction and Model-Checking of Large Heterogeneous Systems. Proc 30th International Conference on Formal Techniques for Distributed Systems, Lecture Notes in Computer Science, Amsterdam, June 2010, Springer-verlag.
28. A. David, K.G. Larsen, A. Legay, U. Nyman, A. Wasowski. Methodologies for Specification of Real-Time Systems Using Timed I/O Automata. Proc 8th International Symposium on Formal Methods for Components and Objects, Lecture Notes in Computer Science, Eindhoven, November 2009, Springer-verlag. Post Proceedings.
29. S. Bensalem, A. Legay, T. Nguyen, J. Sifakis. Incremental Invariant Generation for Compositional Design Proc 4th IEEE International Symposium on Theoretical Aspects of Software Engineering, IEEE, Taipei, August 2010.
30. J. Ortiz, A. Legay, P-Y. Schobbens. Memory Event Clocks. Proc. 8th International Conference on Formal Modelling and Analysis of Timed Systems, Lecture Notes in Computer Science, Vienna, September 2010, Springer-verlag.



31. A. David, K.G. Larsen, A. Legay, U. Nyman, A. Wasowski. Methodologies for Specification of Real-Time Systems Using Timed I/O Automata. Proc 8th Symposium on Automated Technology for Verification and Analysis, Lecture Notes in Computer Science, Singapore, September 2010, Springer-verlag.
32. B. Caillaud, B. Delahaye, K. Larsen, A. Legay, M. Pedersen, A. Wasowski. Compositional Design Methodology with Constraint Markov Chains. Proc. 7th International Conference on Quantitative Evaluation of SysTems, IEEE, Williamsburg, September 2010.
33. S. Bensalem, M. Bozga, A. Legay, T. Nguyen, J. Sifakis. Incremental Component-based Construction and Verification using Invariants. Proc 10th International Conference on Formal Methods in Computer Aided Design, IEEE, Lugano, October 2010.
34. A. Basu, M. Bozga, S. Bensalem, B. Delahaye, A. Legay, E. Sifakis. Verification of an AFDX Infrastructure using Simulations and Probabilities. Proc 1st International Conference on Runtime Verification, Lecture Notes in Computer Science, Malta, November 2010.
35. A. Legay, S. Bensalem, B. Delahaye. Statistical Model Checking : Present and Future : a tutorial. Proc of 1th International Conference on Runtime Verification, Lecture Notes in Computer Science, Malta, November 2010..
36. B. Delahaye, J-P Katoen, K. Larsen, A. Legay, M. Peddersen, F. Sher, A. Wasowski. Abstract Probabilistic Automata. Proc 12th International Conference on Verification, Model Checking, and Abstraction Interpretation, Lecture Notes in Computer Science, Austin, January 2011.
37. A. Classen, P. Heymans, A. Legay, and P-Y. Schobbens. Symbolic Model Checking of Software Product Lines. Proc 33nd International Conference on Software Engineering, ACM, Hawai, May 2011.
38. T. Bourk, A. David, K. G. Larsen, A. Legay, D. Lime, U. Nyman, A. Wasowski. Nex results on timed specifications. Proc. 20th International Workshop on Algebraic Development Techniques, Verification, Model Checking, and Abstraction Interpretation, Lecture Notes in Computer Science, Elesten, October 2010, Springer Verlag.
39. S. Bensalem, A. Griesmayer, A. Legay, T. Nguyen, J. Sifakis, R. Yan. D-Finder 2 : Towards Efficient Correctness of Incremental Design. Proc 3rd of NASA Formal Methods Symposium, Lecture Notes in Computer Science, Los Angeles, April 2011, Springer Verlag.
40. B. Delahaye, K.G. Larsen, A. Legay, M. Pedersen, A. Wasowski. Decision Problems for Interval Markov Chains. Proc 5th International Conference on Languages and Automata, Lecture Notes in Computer Science, May 2011, Springer Verlag.
41. B. Delahaye, J-P Katoen, K. Larsen, A. Legay, M. Peddersen, F. Sher, A. Wasowski. New Results on Abstract Probabilistic Automata. Proc 11th International Conference on Application of Concurrency to System Design, IEEE, Kanazawa, June 2011.
42. A. Legay, S. Bensalem, A. Griesmayer, R. Yan, L. De Silva and F. Ingrand A Formal Approach for Incremental Construction with an Application to Autonomous Robotic Systems. Proc 12th International Conference on Software Composition, Lecture Notes in Computer Science, Zurich, August 2011.
43. A. David, K. G. Larsen, A. Legay, M. Mikucionis. Time for Real Statistical Model-Checking : Statistical Model-Checking for Real-Time. Proc 23 th International Conference on Computer-Aided Verification, Lecture Notes in Computer Science, Snow Bird, July 2011.
44. J. Ortíz, A. Legay, P-Y. Schobbens. Distributed Event Clock Automata. Proc 16th International Conference on Implementation and Application of Automata, Lecture Notes in Computer Science,

Blois, July 2011.

45. A. Griesmayer, A. Legay, H. Nguyen, D. Peled, S. Bensalem. Efficient Deadlock detection for concurrent systems. Proc 9th International Conference on Formal Methods and Models for Codesign. IEEE. Cambridge, July 2011.
46. B. Delahaye, K.G. Larsen, A. Legay, M. Pedersen, A. Wasowski. APAC : a tool for reasoning about Abstract Probabilistic Automata. Proc. 8th International Conference on Quantitative Evaluation of SysTems, Aachen, September 2011.
47. U. Fahrenberg, A. Legay, A. Wasowski. Make a difference (Semantically). Proc 14th International Conference on Model Driven Engineering Languages and Systems, Lecture Notes in Computer Science, Wellington, October 2011.
48. S. Bauer, P. Mayer, A. Legay. MIO Workbench : A Tool for Compositional Design with Modal Input/Output Interfaces. Proc 9th Symposium on Automated Technology for Verification and Analysis, Lecture Notes in Computer Science, Taipei, October 2011, Springer-verlag.
49. Alexandre David, Kim G. Larsen, Axel Legay, Marius Mikuonis, Danny Poulsen, Jonas Van Vliet and Zheng Wang. Statistical Model Checking for Networks of Priced Timed Automata. Proc. 9th International Conference on Formal Modelling and Analysis of Timed Systems, Lecture Notes in Computer Science, Aalborg, September 2011, Springer-verlag.
50. Louis-Marie Traonouez, Axel Legay, Andrzej Wasowski and Kim G. Larsen. Robust Specification of Real Time Components. Proc. 9th International Conference on Formal Modelling and Analysis of Timed Systems, Lecture Notes in Computer Science, Aalborg, September 2011, Springer-verlag.
51. S. Bauer, U. Fahrenberg, L. Juhl, K. G Larsen, A. Legay and C. Thrane. Quantitative Refinement for Weighted Modal Transition Systems. Proc. 36th International Symposium on Mathematical Foundations of Computer Science, Lecture Notes in Computer Science, Warsaw, August 2011, Springer verlag.
52. S. Bauer, K. G. Larsen, A. Legay, U. Nyman, A. Wasowski. A Modal Specification Theory for Components with Data. Proc. 8th International Symposium on Formal Aspects of Component Software, Lecture Notes in Computer Science, Oslo, September 2011, Springer verlag.
53. U. Fahrenberg, A. Legay, C. Thrahn. The Quantitative Linear-Time Branching-Time Spectrum. Proc 31th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science, Kanpur, December 2011.
54. A. Classens, M. Cordy, P. Heymans, A. Legay, P-Y Schobbens. Managing Evolution in Software Product Lines : A Model Checking Perspective. Proc 6th Variability Modelling of Software-intensive Systems, ACM Digital, Leipzig, January 2012.
55. M. Bozga, A. David, H. Hermanns, A. Hartmaans, K. G. Larsen, A. Legay, J. Tretmans. Tools and Techniques for Modeling and Analyzing Embedded Systems. Proc of International Conference on Design Automation and Test in Europe, IEEE, Dresden, March 2012.
56. C. Jegourelle, A. Legay, S. Sedwards. A Platform for High Performance Statistical Model Checking - PLASMA. Proc. 18th International Conference on Tools and Algorithms for the Construction and Analysis of Systems, Lecture Notes in Computer Science, Tallin, April 2012.
57. S. Bauer, A. David, R. Hennicker, K. G. Larsen, A. Legay, U. Nyman, A. Wasowski. Moving from Specifications to Contracts in Component-based Design. Proc 15th International Conference on Fundamental Approaches to Software Engineering, Lecture Notes in Computer Science, Tallin, April 2012.

58. P. Bulychev, A. David, K. G. Larsen, A. Legay, G. Li, D. Poulsen, A. Stainer. Monitor-Based Statistical Model Checking for Weighted Metric Temporal Logic Proc 18th International Conference on Logic for Programming Artificial Intelligence and Reasoning, Lecture Notes in Computer Science, Merida, May 2012.
59. P. Bulychev, A. David, K. G. Larsen, A. Legay, M. Mikuionis and D. B. Poulsen. Checking and Distributing Statistical Model Checking Proc 4rd of NASA Formal Methods Symposium, Lecture Notes in Computer Science, Nizhny Novgorod, April 2012.
60. E. Kang, A. Legay, P-Y. Schobbens. Verification of Component-based Architectural Models on an Autonomous Truck System. Proc 9th International Conference and Workshops on the Engineering of Autonomic and Autonomous Systems, IEEE, Novi Sad, Serbia, April 2012.
61. S. Bauer, U. Fahrenberg, A. Legay and C. Thrane. General Quantitative Specification Theories with Modalities. Proc 7th International Computer Science Symposium in Russia, Lecture Notes in Computer Science, Norfolk, June 2012.
62. M. Cordy, A. Classen, G. Perrouin, P-Y. Schobbens, P. Heymans, A. Legay. Simulation-based abstractions for software product-line model checking. Proc 34nd International Conference on Software Engineering, ACM, Zurich, June 2012.
63. C. Jegourel, A. Legay, S. Sedwards : Cross-Entropy Optimisation of Importance Sampling Parameters for Statistical Model Checking. Proc 24th International Conference on Computer Aided Verification, Lecture Notes in Computer Science, Berkeley, July 2012.
64. S. Tasharofi, R. K. Karmani, S. Lauterburg, A. Legay, D. Marinov, G. Agha. TransDPOR : A Novel Dynamic Partial-Order Reduction Technique for Testing Actor Programs. Proc 32th International Conference on Formal Techniques for Distributed Systems, Lecture Notes in Computer Science, Stockholm, June 2012.
65. B. Delahaye, U. Fahrenberg, T.A. Henzinger, A. Legay, D. Nickovic. Synchronous Interface Theories and Time Triggered Scheduling. Proc 32th International Conference on Formal Techniques for Distributed Systems, Lecture Notes in Computer Science, Stockholm, June 2012.
66. A Logic for Accumulated-Weight Reasoning on Multiweighted Modal Automata. S. Bauer, L. Juhl, K. G. Larsen, A. Legay, J. Srba Proc 6th IEEE International Symposium on Theoretical Aspects of Software Engineering, IEEE, Beijing, August 2012.
67. M. Cordy, P. Heymans, P-Y Schobbens and A. Legay. Behavioural Modelling and Verification of Real-Time Software Product Lines. Proc. 16th International Software Product Line Conference, ACM, Salvatore, September 2012.
68. S. Bauer, R. Hennicker and A. Legay. Component Interfaces with Contracts on Ports. Proc. 9th International Symposium on Formal Aspects of Component Software, Lecture Notes in Computer Science, San Fransisco, September 2012.
69. P. Bulychev, A. David, K. G. Larsen ; D. Poulsen. Rewrite-Based Statistical Model Checking of WMTL. Proc 3rd International Conference on Runtime Verification, Lecture Notes in Computer Science, Istanbul, September 2012.
70. A. David, K. G. Larsen, A. Legay, M. Mikuionis. Schedulability of Herschel-Planck Revisited Using Statistical Model Checking. Proc 4th International Symposium on Leveraging Applications, Lecture Notes in Computer Science, Crete, October 2012.

71. X. Devroye, M. Cordy, G. Perrouin, E. Kang, P-Y Schobbens, P. Heymans, A. Legay, B. Baudry. Software Product Line, Model-Based Testing, Test Generation, Model-Checking Proc 4th International Symposium on Leveraging Applications, Lecture Notes in Computer Science, Crete, October 2012.
72. A. Legay, B. Delahaye, S. Bensalem, M. Bozga, C. Jegourel, Ayoub Nouri. Statistical Model Checking QoS properties of Systems with SBIP. Proc 4th International Symposium on Leveraging Applications, Lecture Notes in Computer Science, Crete, October 2012.
73. A. Legay, A. David, K. G. Larsen, S. Seadwards, D. Poulsen. Runtime Verification of Biological Systems. Proc 4th International Symposium on Leveraging Applications, Lecture Notes in Computer Science, Crete, October 2012.
74. Y. Boichut, B. Boyer, A. Legay and T. Genet. Equational Abstraction Refinement for Certified Tree Regular Model Checking. Proc 14th International Conference on Formal Engineering Methods, Lecture Notes in Computer Science, Kyoto, November 2012.
75. B. Delahaye, K. G. Larsen, A. Legay. Stuttering for Abstract Probabilistic Automata . Proc Symposium on Logical Foundations of Computer Science, Lecture Notes in Computer Science, San Diego, January 2013.
76. M. Cordy, P. Heymans, A. Legay, P-Y Schobbens. Beyond Boolean Product-Line Model Checking : Dealing with Feature Attributes and Multi-features. Proc 35nd International Conference on Software Engineering, ACM, San Fransisco, June 2013.
77. F. Biondi, A. Legay, P. Malacaria and A. Wasowski. Quantifying Information Leakage of Randomized Protocols. Proc 13th International Conference on Verification, Model Checking, and Abstraction Interpretation, Lecture Notes in Computer Science, January 2013, Springer-verlag.
78. F. Biondi, A. Legay, A. Wasowski. Maximizing Entropy over Markov Processes. Proc 7th International Conference on Languages and Automata, Lecture Notes in Computer Science, May 2013, Springer Verlag.
79. P. Heymans, A. Legay, Maxime Cordy : Efficient quality assurance of variability-intensive systems. ICSE 2013 : 1496-1498.
80. K. G. Larsen, A. Legay : Quantitative Modal Transition Systems. WADT 2012 : 50-58
81. A. David, D. Du, K. Guldstrand Larsen, A. Legay, Marius Mikucionis : Optimizing Control Strategy Using Statistical Model Checking. NASA Formal Methods 2013 : 352-367.
82. B. Delahaye, J. Fiadeiro, A. Legay, Antonia Lopes : A Timed Component Algebra for Services. FMOODS/FORTE 2013 : 242-257.
83. S. Bensalem, M. Bozga, B. Boyer, A. Legay : Incremental Generation of Linear Invariants for Component-Based Systems. ACSD 2013 : 80-89.
84. Thi Thieu Hoa Le, R. Passerone, U. Fahrenberg, Axel Legay : Tag Machines for Modeling Heterogeneous Systems. ACSD 2013 : 186-195.
85. U. Fahrenberg, A. Legay : Generalized Quantitative Analysis of Metric Transition Systems. APLAS 2013 : 192-208.
86. N. Benes, B. Delahaye, U. Fahrenberg, J. Kretinsky, A. Legay : Hennessy-Milner Logic with Greatest Fixed Points as a Complete Behavioural Specification Theory. CONCUR 2013 : 76-90.

87. C. Jegourel, A. Legay, S. Sedwards : Importance Splitting for Statistical Model Checking Rare Properties. CAV 2013 : 576-591.
88. F. Biondi, A. Legay, L-M. Traonouez, A. Wasowski : QUAIL : A Quantitative Security Analyzer for Imperative Code. CAV 2013 : 702-707.
89. B. Raman, A. Nouri, D. Gangadharan, M. Bozga, A. Basu, M. Maheshwari, A. Legay, S. Bensalem, S. Chakraborty : Stochastic modeling and performance analysis of multimedia SoCs. ICSAMOS 2013 : 145-154.
90. A. Arnold, B. Boyer, A. Legay : Contracts and Behavioral Patterns for SoS : The EU IP DANSE approach. AiSoS 2013 : 47-66.
91. S. Bensalem, A. Legay, A. Nouri, Doron Peled : Synthesizing distributed scheduling implementation for probabilistic component-based systems. MEMOCODE 2013 : 87-96.
92. M. Cordy, A. Classen, P. Heymans, P-Y Schobbens, A. Legay : ProVeLines : a product line of verifiers for software product lines. SPLC Workshops 2013 : 141-146.
93. T. Genet, T. Le Gall, A. Legay, V. Murat : A Completion Algorithm for Lattice Tree Automata. CIAA 2013 : 134-145.
94. U. Fahrenberg, A. Legay : History-Preserving Bisimilarity for Higher-Dimensional Automata via Open Maps. Electr. Notes Theor. Comput. Sci. 298 : 165-178 (2013).
95. B. Delahaye, U. Fahrenberg, K.G. Larsen, A. Legay : Refinement and Difference for Probabilistic Automata. QEST 2013 : 22-38.
96. B. Boyer, K. Corre, A. Legay, Sean Sedwards : PLASMA-lab : A Flexible, Distributable Statistical Model Checking Library. QEST 2013 : 160-164.
97. A. Colombo, D. Fontanelli, D. Gandhi, A. De Angeli, L. Palopoli, S. Sedwards, A. Legay : Behavioural templates improve robot motion planning with social force model in human environments. ETFA 2013 : 1-6
98. Z. Esik, U. Fahrenberg, A. Legay, K. Quaas : Kleene Algebras and Semimodules for Energy Problems. ATVA 2013 : 102-117.
99. A. Legay, L-M Traonouez : PyEcdar : Towards Open Source Implementation for Timed Systems. ATVA 2013 : 460-463.
100. A. Colombo, D. Fontanelli, A. Legay, L. Palopoli, S. Sedwards : Motion planning in crowds using statistical model checking to enhance the social force model. CDC 2013 : 3602-3608.
101. X. Devroey, G. Perrouin, M. Cordy, P-Y Schobbens, Axel Legay, Patrick Heymans : Towards statistical prioritization for software product lines testing. VaMoS 2014 : 10.
102. U. Fahrenberg, M. Acher, A. Legay, A. Wasowski : Sound Merging and Differencing for Class Diagrams. FASE 2014 : 63-78.
103. A. David, K.G. Larsen, A. Legay, G. Li, D. Poulsen. Quantified Dynamic Metric Temporal Logic for Dynamic Networks of Stochastic Hybrid Automata. ACSD 2014. To appear.

104. A. David, P. Gjørl Jensen, K. G. Larsen, A. Legay, D. Lime, M. Grund Sørensen, Jakob Haahr Taankvist : On Time with Minimal Expected Cost! ATVA 2014 : 129-145.
105. U. Fahrenberg, K. G. Larsen, A. Legay, L-M Traonouez : Parametric and Quantitative Extensions of Modal Transition Systems. FPS@ETAPS 2014 : 84-97.
106. U. Fahrenberg, A. Legay, L-M Traonouez : Specification Theories for Probabilistic and Real-Time Systems. FPS@ETAPS 2014 : 98-117.
107. B. Delahaye , J. Luiz Fiadeiro, A. Legay, A. Lopes : Heterogeneous Timed Machines. ICTAC 2014 : 115-132.
108. U. Fahrenberg, A. Legay, L-M. Traonouez : Structural Refinement for the Modal  $\mu$ -Calculus. ICTAC 2014 : 169-187.
109. A. Legay, S. Sedwards : Statistical Abstraction Boosts Design and Test Efficiency of Evolving Critical Systems. ISoLA (1) 2014 : 4-25.
110. K. G. Larsen, A. Legay : Statistical Model Checking Past, Present, and Future - (Track Introduction). ISoLA (2) 2014 : 135-142.
111. C. Jégourel, A. Legay, S. Sedwards : An Effective Heuristic for Adaptive Importance Splitting in Statistical Model Checking. ISoLA (2) 2014 : 143-159.
112. B. Boyer, A. Legay, L-M. Traonouez : A Formalism for Stochastic Adaptive Systems. ISoLA (2) 2014 : 160-176.
113. X. Devroey, G. Perrouin, A. Legay, M. Cordy, P-Y. Schobbens, P. Heymans : Coverage Criteria for Behavioural Testing of Software Product Lines. ISoLA (1) 2014 : 336-350.
114. S. Naujokat, L-M. Traonouez, M. Isberner, B. Steffen, A. Legay : Domain-Specific Code Generator Modeling : A Case Study for Multi-faceted Concurrent Systems. ISoLA (1) 2014 : 481-498.
115. U. Fahrenberg, Axel Legay : Configurable Formal Methods for Extreme Modeling. XM@MoDELS 2014 : 52-57.
116. A. Nouri, B. Raman, M. Bozga, A. Legay, S. Bensalem : Faster Statistical Model Checking by Means of Abstraction and Learning. RV 2014 : 340-355.
117. M. Cordy, P. Heymans, A. Legay, P-Y Schobbens, B. Dawagne, Martin Leucker : Counterexample guided abstraction refinement of product-line behavioural models. SIGSOFT FSE 2014 : 190-201.
118. X. Devroey, G. Perrouin, M. Cordy, M. Papadakis, A. Legay, P-Y. Schobbens : A variability perspective of mutation analysis. SIGSOFT FSE 2014 : 841-844.
119. U. Fahrenberg, F. Biondi, K. Corre, C. Jegourel, S. Kongshoj, A. Legay : Measuring Global Similarity Between Texts. SLSP 2014 : 220-232.
120. Zoltan Esik, Uli Fahrenberg, Axel Legay : star-Continuous Kleene omega-Algebras. DLT 2015 : 240-251.

121. Genaína Nunes Rodrigues, Vander Alves, Vinicius Nunes, André Lanna, Maxime Cordy, Pierre-Yves Schobbens, Amir Molzam Sharifloo, Axel Legay : Modeling and Verification for Probabilistic Properties in Software Product Lines. HASE 2015 : 173-180.
122. J. Kim, A. Legay, K. G. Larsen, M. Mikucionis, B. Nielsen : Resource-Parameterized Timing Analysis of Real-Time Systems. Haifa Verification Conference 2015 : 190-205.
123. J. M. Atlee, U. Fahrenberg, A. Legay : Measuring Behaviour Interactions between Product-Line Features. FormaliSE@ICSE 2015 : 20-25.
124. X. Devroey, M. Cordy, P-Y. Schobbens, A. Legay, P. Heymans : State machine flattening, a mapping study and tools assessment. ICST Workshops 2015 : 1-8.
125. F. Biondi, A. Legay, J. Quilbeuf : Comparative Analysis of Leakage Tools on Scalable Case Studies. SPIN 2015 : 263-281.
126. M. H. ter Beek, A. Legay, A. Lluch-Lafuente, Andrea Vandin : Statistical analysis of probabilistic models of software product lines with quantitative constraints. SPLC 2015 : 11-15.
127. G. Perrouin, A. Legay : SPLat 2015 : Second International Workshop on Software Product Line Analysis Tools. SPLC 2015 : 395.
128. X. Devroey, G. Perrouin, A. Legay, Pierre-Yves Schobbens, Patrick Heymans : Covering SPL Behaviour with Sampled Configurations : An Initial Assessment. VaMoS 2015 : 59.
129. M. H. ter Beek, A. Legay, A. Lluch-Lafuente, A. Vandin : Quantitative Analysis of Probabilistic Models of Software Product Lines with Statistical Model Checking. FMSPLE 2015 : 56-70.
130. T. Given-Wilson, A. Legay : On the Expressiveness of Joining. ICE 2015 : 99-113.
131. Q. Cappart, A. Legay, C. Limbree, P. Schaus. Verification by discrete simulation of interlocking systems. To appear at ESM 2015.
132. F. Biondi, T. Given-Wilson, A. Legay. Attainable Unconditional Security for Shared-Key Cryptosystems. To appear at Trustcom 2015.
133. D. Cachera, U. Fahrenberg, A. Legay. An Omega-Alebra for Real-Time energy problems. To appear at FSTTCS 2015.
134. Z. Etzik, A. Legay. Partial Higher-Dimensional Automata. To appear at Calco 2015.
135. Van Chan Ngo, Axel Legay, Vania Joloboff : PSCV : A Runtime Verification Tool for Probabilistic SystemC Models. CAV (1) 2016 : 84-91.
136. Mounir Chadli, Jin Hyun Kim, Axel Legay, Louis-Marie Traonouez, Stefan Naujokat, Bernhard Steffen, Kim Guldstrand Larsen : A Model-Based Framework for the Specification and Analysis of Hierarchical Scheduling Systems. FMICS-AVoCS 2016 : 133-141.
137. Olga Gadyatskaya, René Rydhof Hansen, Kim Guldstrand Larsen, Axel Legay, Mads Chr. Olesen, Danny Bøgsted Poulsen : Modelling Attack-defense Trees Using Timed Automata. FORMATS 2016 : 35-50.

138. Van Chan Ngo, Axel Legay, Jean Quilbeuf : Statistical Model Checking for SystemC Models. HASE 2016 : 197-204.
139. Gilles Perrouin, Moussa Amrani, Mathieu Acher, Benoît Combemale, Axel Legay, Pierre-Yves Schobbens : Featured model types : towards systematic reuse in modelling language engineering. MiSE@ICSE 2016 : 1-7.
140. Xavier Devroey, Gilles Perrouin, Mike Papadakis, Axel Legay, Pierre-Yves Schobbens, Patrick Heymans : Featured model-based mutation analysis. ICSE 2016 : 655-666.
141. Thomas Given-Wilson, Axel Legay : On the Expressiveness of Symmetric Communication. ICTAC 2016 : 139-157.
142. Pedro R. D'Argenio, Arnd Hartmanns, Axel Legay, Sean Sedwards : Statistical Approximation of Optimal Schedulers for Probabilistic Timed Automata. IFM 2016 : 99-114.
143. Kim G. Larsen, Axel Legay : Statistical Model Checking : Past, Present, and Future. ISoLA (1) 2016 : 3-15.
144. Kenan Kalajdzic, Cyrille Jégourel, A. Lukina, Ezio Bartocci, Axel Legay, Scott A. Smolka, Radu Grosu : Feedback Control for Statistical Model Checking of Cyber-Physical Systems. ISoLA (1) 2016 : 46-61.
145. Axel Legay, Sean Sedwards, Louis-Marie Traonouez : Plasma Lab : A Modular Statistical Model Checking Platform. ISoLA (1) 2016 : 77-93.
146. Maurice H. ter Beek, Axel Legay, Alberto Lluch-Lafuente, Andrea Vandin : Statistical Model Checking for Product Lines. ISoLA (1) 2016 : 114-133.
147. Jean Quilbeuf, Everton Cavalcante, Louis-Marie Traonouez, Flávio Oquendo, Thaís Batista, Axel Legay : A Logic for the Statistical Model Checking of Dynamic Software Architectures. ISoLA (1) 2016 : 806-820.
148. Kim G. Larsen, Axel Legay : On the Power of Statistical Model Checking. ISoLA (2) 2016 : 843-862.
149. Fabrizio Biondi, Axel Legay : Security and Privacy of Protocols and Software with Formal Methods. ISoLA (1) 2016 : 883-892.
150. Axel Legay, Sean Sedwards, Louis-Marie Traonouez : Rare Events for Statistical Model Checking an Overview. RP 2016 : 23-35.
151. Jin Hyun Kim, Axel Legay, Louis-Marie Traonouez, Mathieu Acher, Sungwon Kang : A formal modeling and analysis framework for software product line of preemptive real-time systems. SAC 2016 : 1562-1565.
152. Maxime Cordy, Patrick Heymans, Axel Legay, Pierre-Yves Schobbens, Bruno Dawagne, Martin Leucker : Counterexample guided abstraction refinement of product-line behavioural models. Software Engineering 2016 : 79-80.
153. Cyrille Jégourel, Kim G. Larsen, Axel Legay, Marius Mikucionis, Danny Bøgsted Poulsen, Sean Sedwards : Importance Sampling for Stochastic Timed Automata. SETTA 2016 : 163-178.



154. Rafael Olaechea, Uli Fahrenberg, Joanne M. Atlee, Axel Legay : Long-term average cost in featured transition systems. SPLC 2016 : 109-118.
155. Xavier Devroey, Gilles Perrouin, Axel Legay, Pierre-Yves Schobbens, Patrick Heymans : Search-based Similarity-driven Behavioural SPL Testing. VaMoS 2016 : 89-96.
156. Ayoub Nouri, Marius Bozga, Axel Legay, Saddek Bensalem : Performance Evaluation of Complex Systems Using the SBIP Framework. VECoS 2016 : 11-26.

## 7.5 Surveys and Tutorials

1. L. de Alfaro, M. Faella, A. Legay. An Introduction to the Tool TICC. Proc. of TrustWorthy Workshop Software 2006. Saarbrücken, August 2006. Published in Dagstuhl online proceedings series.
2. E. Badouel, A. Benvenist, B. Caillaud, T. Henzinger, A. Legay, R. Passerone. Contract Theories for Embedded Systems : A White Paper. Document of the COMBEST EU project ;
3. A. Legay and B. Delahaye. Statistical Model Checking : A brief Overview. Proc of Quantitative Models : Expressiveness and Analysis 2010. Wadern, January 2010. Published in Dagstuhl online proceedings series.
4. U. Fahrenberg, K. G. Larsen, A. Legay : Model-Based Verification, Optimization, Synthesis and Performance Evaluation of Real-Time Systems. ICTAC Training School on Software Engineering 2013 : 67-108.

## 7.6 Workshops

1. A. Bouajjani, A. Legay, P. Wolper. Handling Liveness properties in (Omega-)Regular Model Checking. Proc of Infinity04 Workshop, pages 37-48, London, September 2004. Electronic Notes in Theoretical Computer Science.
2. P. Aziz Abdulla, A. Legay, J. d'Orso, A. Rezine. Simulation-Based Iteration of Tree Transducers (short version). Proc. 10th Nordic Workshop on Programming Theory, Uppsala, October 2004.
3. M. Faella, A. Legay, M. Stoelinga. Model checking Quantitative Linear Time Logic. Proc 6th Workshop on Quantitative Aspects of Programming Languages, Electronic Notes in Computer Science, Budapest, April 2008.
4. E. M. Clarke, A. Donze, A. Legay. Statistical Model Checking of Mixed-Analog Circuits. Proc. 2nd Workshop on Formal Verification of Analog Circuits. See the Haifa 2008 improved version.
5. B. Delahaye, B. Caillaud, A. Legay. Compositional Reasoning for Assume/Guarantee Contracts Combining Stochastic and Nondeterministic Aspects. Proc. 21th Nordic Workshop on Programming Theory, October 2009.
6. B. Delahaye, K. G. Larsen, A. Legay, M. Peddersen, A. Wasowski. Decision Problems for Interval Markov Chains. Proc 22th Nordic Workshop on Programming Theory, October 2010.
7. P. E. Bulychev, A. David, K. G. Larsen, M. Mikucionis, A. Legay. Distributed Parametric and Statistical Model Checking. Proc 10th International Workshop on Parallel and Distributed Methods in verification, Snow-bird, July 2011.

8. B. Delahaye, K. G. Larsen, A. Legay, M. Peddersen, A. Wasowski, Stuttering in Abstract Probabilistic Automata. Proc 23th Nordic Workshop on Programming Theory, October 2011.
9. P. Bulychev, A. David, K.G. Larsen, A. Legay. Computing Nash Equilibrium in Wireless Ad Hoc Networks : A Simulation-Based Approach. Second International Workshop on Interactions, Games and Protocols, EPTCS, Tallin, April 2012.
10. U. Fahrenberg, A. Legay. A Robust Specification Theory for Modal Event-Clock Automata. FIT 2012, EPTCS, Tallin, April 2012.
11. Thi Thieu Hoa Le, R. Passerone, U. Fahrenberg, A. Legay : A Tag Contract Framework for Heterogeneous Systems. ESOC Workshops 2013 : 204-217.
12. A. Legay, E. P. de Vink : SPLat 2014 : First International Workshop on Software Product Line Analysis Tools. SPLC 2014 : 353

## 8 Tools

I participated to the design/implementation of the following tools.

1. PLASMA. Our new Statistical Model Checking. Available at <https://project.inria.fr/plasma-la>.
2. PyEcdar is the Inria extended version of the ECDAR toolset for interface theories. Available at <https://project.inria.fr/pyecdar/>
3. T(O)RMC, a tool for (omega-)regular model checking.  
Web : <http://www.montefiore.ulg.ac.be/~legay/TORMC/index-tormc.html>. I coded the full toolset. I am responsible for the maintenance of the tool.
4. TICC, a tool for the specification and the verification of open systems.  
Web : <http://dvlab.cse.ucsc.edu/dvlab/Ticc>. I coded the tool in collaboration with Marco Faella and Luca de Alfaro. We are still maintaining the tool.
5. APEX, a tool for the verification of randomized algorithms.  
Web : No web page yet. I coded the tool in collaboration with Andrzej Murawski (Oxford). We are still maintaining the tool.
6. BIOLAB, a tool for systems biology using statistical model checking. Web : No web page yet. The tool has mainly be coded by Sumit Jha. I was responsible for the coding of several monitoring modules. The tool is no longer maintained.
7. SNIP : A new series of tools for the verification of Software Product Lines.  
Web : <http://www.info.fundp.ac.be/~acs/fts/implementations/>  
I am responsible for the design of the input language of the various tools of the project. I also coordinate the coding of our algorithms.
8. ECDAR : A tool for the design of timed systems.  
Web : <http://www.cs.aau.dk/~adavid/ecdar/index.html>. The tool has been coded by Alexandre David. I helped Alexandre with several technical difficulties. I recently designed new efficient data structures that should replace the existing ones to gain in efficiency.
9. APAC : a tool for the design of stochastic systems.  
Web : <http://www.cs.aau.dk/~adavid/ecdar/index.html>. The tool has been coded by Mikkel Larsen. I helped Mikkel with several technical difficulties.

## 9 Awards

- Velux Invited Professor award (2015).
- Best paper award at FACS (2014).
- Best paper award at Haifa verification days conference (2008).
- IBM prize winner for the best Belgian thesis in computer science (2008).
- Best paper award at International Symposium on Formal Aspects of Component Software (2011).
- Velux Industry Professor award (2015).
- Parnas Award (2016).

## 10 Fellowships

- **MT-Lab fellowship** for a one month visit at ITU Copenhagen (2011).
- **MT-Lab fellowship** for a one month visit at Aalborg University (2009).
- **Belgian American Educational Foundation** fellow for a one year postdoc at Carnegie Mellon University (2008).
- **London Royal Society** fellow for a three months visit at Oxford University (2006).
- **Region Wallone** fellow for a five months visit at the University of California Santa Cruz (2005).
- **FRIA** for a four years PhD at the *University of Liege*, Belgium.

## 11 Grants

- Chist-Era : H2020 project (2017 – 2019), 200k ; French PI.
- CISCO Grant (540k research 1000k Material) (2016 – 2019), PI.
- ENABLE-S3 : ECSEL project (2016 – 2019), 230k ; Inria Co-PI.
- Cyber security Bretagne (2015 – 2018), 220k ; Inria PI.
- Participant to Inria-MSR Privacy project (2015–2018).
- Internation participant to NSC China (2015–2018) ; INRIA coordinator.
- Incitative Region Grant CLEVER (2015), 20k ; INRIA PI.
- MARIE CURIE action with ARGENTINA (2015-2017).
- H2020 ACANTO (2015-2018), 320K ; INRIA PI.
- SAD Region Grant (2015–2016), 80k ; INRIA PI.

- Exploratory action on systems of systems (2015–2016), 100k; INRIA PI.
- Royal Society project (2015-2016), 15k; INRIA PI.
- EMC2 : ARTEMIS EU Project (2015–2017), 360k.
- MALTHY : ANR (2015–2018); 250k; INRIA PI.
- PLASMA : Action de recherche INRIA (2014–2016); 100k; INRIA PI.
- EUROPEAN Project D-Mils (2012–2015) : 60k; Subcontractor.
- European Project SENSATION (2012–2015) : 300k; INRIA PI.
- European Project DALI (2011–2014) : 300k; INRIA PI.
- European Project DANSE (2011–2014) : 500k; INRIA PI.
- TOURNESOL Project (2011) : 10k.
- CREATE Project ESTASE (2011-2013) : 300k.
- European Project COMBEST (2009-2011). Sub-task leader for INRIA.
- Network of Excellence ARTIST Design (2002-2012).
- European Project GASSICS (2009-2012). The project is located in Namur, Belgium.
- Action de Recherche Collaborative INRIA (2010-2011). Project’s coordinator. : 120 k

## 12 Professional Activities and Service

- **Invited speaker**
  1. 1st International Workshop on Methods and Tools for Coordinating Concurrent, Distributed and Mobile Systems.
  2. 4th Artist Design Workshop on Foundations of Component-based Design, 2009.
  3. 5th Artist Design Workshop on Foundations of Component-based Design, 2010.
  4. 2nd Quantitative Model Checking School, 2012.
  5. 4th International Workshop on Foundations of Interface Technologies.
  6. Cyber physical systems school Algeria 2013.
  7. 10th International Symposium on Formal Aspects of Component Software.
  8. Cyber physical systems School Grenoble 2014.
  9. 8th International Symposium on Theoretical Aspects of Software Engineering 2014.

10. 11th International Workshop on Variability Modelling of Software-intensive Systems
11. 43rd International Conference on Current Trends in Theory and Practice of Computer Science.

— **Conference program committee chair and organizer**

1. Track chair on Systems of Systems at the 32nd ACM SIGAPP Symposium On Applied Computing
2. 23th International Conference on Tools and Algorithms for the Construction and Analysis of Systems, chair.
3. 14th International Symposium on Automated Technology for Verification and Analysis, chair.
4. 4th International Conference on Runtime Verification : PC Chair, General Chair.
5. 11th International Workshop on Verification of Infinite-State Systems.
6. 3rd International Workshop on Foundations of Interface Theories.
7. 1st International Rigorous Embedded Design workshop 2011.
8. 2nd Quantities in Formal Methods workshop 2012.
9. 4th Runtime Verification Conference 2013.
10. 12th International Conference on Formal Modeling and Analysis of Timed Systems.
11. 2nd Workshop MEALS for exchanges between Europe and Argentina.
12. Statistical Model Checking track chair at the 6th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation
13. 1st international workshop on Software Product Line Analysis Tools.

I also organized two Dagstuhl events and several project meetings.

— **Guest Editor**

- Guest editor for the International Journal on Software Tools for Technology Transfer on “Cyber Physical Systems”.
- Guest editor for the Formal Methods in System Design journal on “runtime verification”
- Guest editor for the International Journal on Software Tools for Technology Transfer on “statistical model checking”.
- Editor for the Journal on foundations to mastering changes.

— **Conference refereeing**

CAV 04, TACAS 05, LPAR 05, EXPRESS 06, TACAS 07, ICALP 08, CAV 09, INFINITY 09, CONCUR 09, ADHS 09, BENELEARN 09, JLAP 09, SOFSEM 09, ICFEM 09, CAV 10, LICS 10, ICALP 10, CONCUR 10, QEST 10, RTSS 10 (PC member), LPAR 10, VAMOS 11(PC member), STTT 10, FMSD 10, QEST 11 (PC member), TACAS 2011. DATE 11 (PC External expert reviewer), FORMATS 11 (PC member), RTSS 11 (PC member), NFM 11, CAV 11, FORTE 11, ICFEM 11, SEFM 11, FSTTCS 11, DATE 12 (PC member), LATA 12, CAV 12, RV 12, FIT 12 (PC member), FMSD 12, TSE 12, FORMATS 12 (PC member), TACAS 13 (PC member), SAC 2013 (PC member) RV 2013 (PC Chair), FACS 2013 (PC member), FORTE 2013 (PC member), SPLC 2013 (PC member), QEST 2013 (PC member for tools), HVC (PC Chair), SMC 2013 (PC Chair), ISSRE 2013 (PC member), RV 2014 (PC member), ICTAC 2014 (PC member), ASE 2014 (ERP PC member), FORMATS 2014 (PC Chair), FormaliSE 2014 (PC member), FORTE 2014 (PC member), FASE 2014 (subreviewer), SPLC 2014 (PC member), MEMOCODE 2014 (PC member), SPlat 2014 (PC Chair), SPlat 2015 (PC Chair), MEMOCODE 2015 (PC member), SPLC 2015 (PC member), FACS 2015 (PC member), Formalize 2015 (PC member), ASE 2015 (ERP PC member), RV 2015 (PC member), FASE 2016, ATVA 2016 (PC Chair), ASE 2016 (PC member) MEMOCODE 2016 (PC member), SPLC 2016 (PC member), RV 2016 (PC member), Formalize 2016 (PC member), TACAS 2017 (PC Chair), Formalize 2017 (PC member), SAC 2017 (Track Chair), IFM 2017 (PC member).

— **Invited seminar talks**

Dagstuhl seminar, February 2003; Advance Project, February 2004; Universite de Namur, December 2004; Universite de Rennes, February 2005; Dagstuhl seminar, February 2006; University of Twente, May 2006; Universite de Namur, June 2006; Oxford University, July 2006; GRASCOMP doctoral school, September 2006; Dagstuhl seminar, October 2006; Aachen University, December 2006; Ecole normale superieur de Cachan, December 2006; University of Munich, February 2007; Universite de Bordeaux, March 2007; Carnegie Mellon University, November 2007; Universite de Rennes, December 2007; Universite de Namur, April 2008; University of Illinois; June 2008; Ecole Polytechnique Faculte de Lausanne, December 2008; Ecole normale superieur de Cachan, February 2009; University of Munich (2 lectures), July 2009. ESWEEK, October 2009. Ecole normale superieur de Cachan, Octobre 2009. Aalborg University, November 2009; Dagstuhl seminar, January 2010; Dagstuhl seminar, February 2010; University of Illinois, September 2010; GRASCOMP doctoral school, November 2011, Winter School Copenhagen 2012, Quant verif workshop Morocco 2013, Copenhagen course 2013, Summer School Algeria 2013, cyber physical systems school Grenoble 2014, Dagstuhl 2014 January and June, NASA 2015, University of Louvain 2015, Rice University 2015, University of Pisa 2016, University of Aalborg 2016, University of Luxembroug 2016, Technical University of Denmark 2016, Limmerick University 2016.

— **Some Talks in Conferences**

INFINITY 2004, Trustworthy 2006, WADT 2007, QEST 2007, CAV 2008, CIAA 2008, EMSOFT 2009, QEST 2009, INFINITY 2009, FSTTCS 2009, RV 2010, RV 2010, QEST 2011, ISOLA 2012, LFCS 2013, ICSE 2013, TASE 2014, ISOLA 2016, SOFSEM 2017, VAMOS 2017.

— **Local organization**

1. Member of local team for the organization of 16th conference on Concurrency Theory.
2. RV'13
3. ETAPS'14
4. Workshop in Honor of Joseph Sifakis at ETAPS 2014.

— **References**

1. Edmund Clarke
2. Kim. G. Larsen
3. Joost-Pieter Katoen
4. Joseph Sifakis
5. Moshe Vardi