



## Project Final Report Use and Dissemination of Foreground

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Emergent Connectors for

Eternal Software Intensive Networked Systems

ICT FET IP Project

# Project Final Report

## Use and Dissemination of Foreground



<http://www.connect-forever.eu>



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<b>Reviewer(s)</b>	:	Nikolaos Georgantas (Inria)

## Abstract

This document is the final report on use and dissemination of foreground, part of the CONNECT final report. The document provides the lists of: publications, dissemination activities, and exploitable foreground

## Document History

Version	Type of change	Author(s)
V0	Initial template	E. Grousset
V1	First version	P-G. Raverdy
V2	Completion, incl. data from HAL	E. Grousset, V. Issarny
V3/Final	Final editing	E. Grousset



**LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS, STARTING WITH THE MOST IMPORTANT ONES**All the CONNECT publications are released at the open archive HAL site at <http://hal.inria.fr/CONNECT>

NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
1	Srijan: a graphical toolkit for sensor network macroprogramming	Animesh Pathak	7th joint meeting of the European software engineering conference and the ACM SIGSOFT symposium on The foundations of software engineering	2009	ACM	NL	2009	301-302	<a href="http://hal.inria.fr/inria-00459353">http://hal.inria.fr/inria-00459353</a>	yes
2	Automatic Synthesis of Behavior Protocols for Composable Web-Services	Antonia Bertolino	The 7th joint meeting of the European Software Engineering Conference (ESEC) and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (FSE) – ESEC/FSE09	2009	ACM	NL	2009	141-150	<a href="http://hal.inria.fr/inria-00415421">http://hal.inria.fr/inria-00415421</a>	yes
3	Service Substitution Revisited	Dionysis Athanasopoulos	24th IEEE/ACM International Conference on Automated Software Engineering - ASE 2009	2009		NZ	2009		<a href="http://hal.inria.fr/inria-00459358">http://hal.inria.fr/inria-00459358</a>	yes
4	Reo2MC: a Tool Chain for Performance Analysis of Coordination Models	Farhad Arbab	7th joint meeting of the European software engineering conference and the ACM SIGSOFT symposium on The foundations of software engineering	2009	ACM	NL	2009		<a href="http://hal.inria.fr/inria-00458921">http://hal.inria.fr/inria-00458921</a>	yes
5	Secure Service Composition with Symbolic Effects	Gabriele Costa	SEEFM'09 : 4th South-East European Workshop on Formal Methods	2009		GR	2009		<a href="http://hal.inria.fr/inria-00458891">http://hal.inria.fr/inria-00458891</a>	yes

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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
6	SM@RT: Applying Architecture-based Runtime Management into Internetware Systems	Gang Huang	SM@RT: Towards Architecture-based Runtime Management of Internetware Systems	2009		CHN	2009		<a href="http://hal.inria.fr/inria-00459621">http://hal.inria.fr/inria-00459621</a>	yes
7	From Mobility to Ubiquity and Beyond: Challenges to Middleware	Gordon Blair	ACM Mobility 09	2009		FR	2009		<a href="http://hal.inria.fr/inria-00441980">http://hal.inria.fr/inria-00441980</a>	yes
8	Dynamic testing via automata learning	Harald Raffelt	International Journal on Software Tools for Technology Transfer	2009	Springer	-	2009	307-324	<a href="http://hal.inria.fr/inria-00459956">http://hal.inria.fr/inria-00459956</a>	yes
9	LearnLib: a framework for extrapolating behavioral models	Harald Raffelt	International Journal on Software Tools for Technology Transfer	2009	Springer	-	2009	393-407	<a href="http://hal.inria.fr/inria-00459959">http://hal.inria.fr/inria-00459959</a>	yes
10	Generating Synchronization Engines between Running Systems and Their Model-Based Views	Hui Song	ACM/IEEE 12th International Conference on Model Driven Engineering Languages and Systems (MoDELS'09)	2009		USA	2009		<a href="http://hal.inria.fr/inria-00459616">http://hal.inria.fr/inria-00459616</a>	yes

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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
11	Selecting Fault Tolerant Styles for Third-Party Components with Model Checking Support	Junguo Li	International SIGSOFT Symposium on Component-based Software Engineering (CBSE)	2009		USA	2009		<a href="http://hal.inria.fr/inria-00459608">http://hal.inria.fr/inria-00459608</a>	yes
12	Supporting Heterogeneity in Data Driven Sensor Network Macroprogramming	Mahanth K. Gowda	Second student research symposium on High Performance Computing (HPC 2009)	2009		IND	2009		<a href="http://hal.inria.fr/inria-00458907">http://hal.inria.fr/inria-00458907</a>	yes
13	On Quantitative Software Verification	Marta Kwiatkowska	SPIN 2009 : Model Checking Software, 16th International SPIN Workshop	2009	Springer	FR	2009	2-3	<a href="http://hal.inria.fr/inria-00457746">http://hal.inria.fr/inria-00457746</a>	yes
14	Stochastic Games for Verification of Probabilistic Timed Automata	Marta Kwiatkowska	7th International Conference on Formal Modeling and Analysis of Timed Systems : FORMATS 2009	2009	Springer	HUN	2009	212-217	<a href="http://hal.inria.fr/inria-00457923">http://hal.inria.fr/inria-00457923</a>	yes
15	PRISM: probabilistic model checking for performance and reliability analysis	Marta Kwiatkowska	ACM SIGMETRICS Performance Evaluation Review	2009	ACM	-	2009	40-45	<a href="http://hal.inria.fr/inria-00457906">http://hal.inria.fr/inria-00457906</a>	yes

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16	Towards an assume-guarantee theory for adaptable systems	Paola Inverardi	SEAMS 2009 : Workshop Software Engineering for Adaptive and Self-Managing Systems	2009		CAN	2009	106-115	<a href="http://hal.inria.fr/inria-00392562">http://hal.inria.fr/inria-00392562</a>	yes
17	Mediating for Reduction (on Minimizing Alternating Büchi Automata)	Parosh Za. Abdulla	FSTTCS 2009 : IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science	2009		IN	2009	1-12	<a href="http://hal.inria.fr/inria-00459966">http://hal.inria.fr/inria-00459966</a>	yes
18	Emergent middleware: rethinking interoperability for complex pervasive systems	Paul Grace	10th ACM/IFIP/USENIX International Conference on Middleware Poster Session	03/12/2009	Springer	USA	2009		<a href="http://hal.inria.fr/inria-00459163">http://hal.inria.fr/inria-00459163</a>	yes
19	Feature Interaction Problems in Web-based Service Composition	Qi Zhao	10th International Conference on Feature Interactions (ICFI)	11/06/2009		PT	2009		<a href="http://hal.inria.fr/inria-00459627">http://hal.inria.fr/inria-00459627</a>	yes



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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
20	Using quantitative analysis to implement autonomic IT systems	Radu Calinescu	ICSE 2009 : IEEE 31st International Conference on Software Engineering	2009		CAN	2009	100-110	<a href="http://hal.inria.fr/inria-00458053">http://hal.inria.fr/inria-00458053</a>	yes
21	Towards a Formalization of Mediating Connectors for on the Fly Interoperability	Romina Spalazzese	Joint Working IEEE/IFIP Conference on Software Architecture 2009 & European Conference on Software Architecture 2009	2009		UK	2009		<a href="http://hal.inria.fr/inria-00404308">http://hal.inria.fr/inria-00404308</a>	yes
22	Towards Mediator Connectors for Application level Interoperability	Romina Spalazzese	ESEC/FSE Doctoral Symposium'09	2009		NL	2009	35-36	<a href="http://hal.inria.fr/inria-00442006">http://hal.inria.fr/inria-00442006</a>	yes
23	A Formalization of Mediating Connectors: Towards on the fly Interoperability	Romina Spalazzese	NULL	2009		-	2009		<a href="http://hal.inria.fr/inria-00441636">http://hal.inria.fr/inria-00441636</a>	yes

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24	CONNECT Challenges: Towards Emergent Connectors for Eternal Networked Systems	Valérie Issarny	14th IEEE International Conference on Engineering of Complex Computer Systems	2009		GER	2009	154-161	<a href="http://hal.inria.fr/inria-00392809">http://hal.inria.fr/inria-00392809</a>	yes
25	CONNECT: Emergent Connectors for Eternal Software Intensive Networked Systems	Valérie Issarny	FET'09 - The European Future Technologies Conference and Exhibition	2009		TCH	2009		<a href="http://hal.inria.fr/inria-00379423">http://hal.inria.fr/inria-00379423</a>	yes
26	Discovering Homogeneous Web Service Community in the User-Centric Web Environment	Xuanzhe Liu	IEEE Transactions on Service Computing	2009	IEEE	-	2009		<a href="http://hal.inria.fr/inria-00459632">http://hal.inria.fr/inria-00459632</a>	yes

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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
27	Partial Order Reductions for model checking temporal epistemic logic over interleaved multi-agent systems	Alessio Lomuscio	AAMAS 2010 : International Conference on Autonomous Agents and Multiagent Systems	2010	IEEE CS Press	CAN	2010		<a href="http://hal.inria.fr/inria-00458132">http://hal.inria.fr/inria-00458132</a>	yes
28	Towards an architecture for runtime interoperability	Amel Bennaceur	ISoLA 2010 - 4th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation	2010		GR	2010	206-220	<a href="http://hal.inria.fr/inria-00512446">http://hal.inria.fr/inria-00512446</a>	yes
29	Learning from the Cell Life-cycle: a Self-Adaptive Paradigm	Antinisca Di Marco	Proc. of the 4th European Conference on Software Architecture (ECSA2010)	2010		DK	2010		<a href="http://hal.inria.fr/inria-00512415">http://hal.inria.fr/inria-00512415</a>	yes
30	Metrics for QoS analysis in dynamic, evolving and heterogeneous CONNECTed systems	Antinisca Di Marco	WODA 2010 Eighth International Workshop on Dynamic Analysis	2010		IT	2010		<a href="http://hal.inria.fr/inria-00536748">http://hal.inria.fr/inria-00536748</a>	yes
31	Model-based dynamic QoS-driven service composition	Antinisca Di Marco	QUASSOSS @ MODELS 2010 2nd International Workshop on the Quality of Service-Oriented Software Systems	2010		NW	2010		<a href="http://hal.inria.fr/inria-00536735">http://hal.inria.fr/inria-00536735</a>	yes

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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
32	Dependability in dynamic, evolving and heterogeneous systems: the CONNECT approach	Antonia Bertolino	2nd International Workshop on Software Engineering for Resilient Systems (SERENE 2010)	2010		UK	2010		<a href="http://hal.inria.fr/inria-00512426">http://hal.inria.fr/inria-00512426</a>	yes
33	On-the-fly Interoperability through Automated Mediator Synthesis and Monitoring?	Antonia Bertolino	ISoLA 2010 4th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation	2010		GR	2010		<a href="http://hal.inria.fr/inria-00536763">http://hal.inria.fr/inria-00536763</a>	yes
34	A framework for automatic generation of security controller	Fabio Martinelli	SOFTWARE TESTING, VERIFICATION AND RELIABILITY	2010	John Wiley & Sons	-	2010		<a href="http://hal.inria.fr/inria-00536752">http://hal.inria.fr/inria-00536752</a>	yes
35	From ZULU to RERS - Lessons Learned in the ZULU Challenge	Falk Howar	4th International Symposium on Leveraging Applications of Formal Methods, Verification, and Validation, ISoLA 2010	2010		GR	2010	687--704	<a href="http://hal.inria.fr/hal-00647740">http://hal.inria.fr/hal-00647740</a>	yes

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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
36	On Handling Data in Automata Learning - Considerations from the CONNECT Perspective	Falk Howar	4th International Symposium on Leveraging Applications of Formal Methods, Verification, and Validation, ISoLA 2010	2010		GR	2010	221-235	<a href="http://hal.inria.fr/hal-00647734">http://hal.inria.fr/hal-00647734</a>	yes
37	Dependability Analysis and Verification for Connected Systems	Felicita Di Giandomenico	ISOLA 2010, 4th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation	2010		GR	2010		<a href="http://hal.inria.fr/inria-00534202">http://hal.inria.fr/inria-00534202</a>	yes
38	Using QoS Contracts to Drive Architecture-Centric Self-Adaptation	Franck Chauvel	Proceedings of the 6th Intl. Conference on Quality of Software Architecture (QoSA 2010)	2010		CZ	2010	102--118	<a href="http://hal.inria.fr/inria-00513189">http://hal.inria.fr/inria-00513189</a>	yes
39	Extending Security-by-Contract with Quantitative Trust on Mobile Devices	Gabriele Costa	4th International Conference on Complex, Intelligent and Software Intensive Systems (CISIS 2010)	2010	IEEE Computer Society Press	POL	2010		<a href="http://hal.inria.fr/inria-00536705">http://hal.inria.fr/inria-00536705</a>	yes
40	Enforcing Private Policy via Security-by-Contract	Gabriele Costa	UPGRADE (European Journal for the Informatics Professional)	2010	CEPIS	-	2010	1	<a href="http://hal.inria.fr/inria-00536716">http://hal.inria.fr/inria-00536716</a>	yes

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41	Runtime monitoring for next generation Java ME platform	Gabriele Costa	Computers & Security / Computers and Security	2010	Elsevier	-	2010	74-87	<a href="http://hal.inria.fr/inria-00458909">http://hal.inria.fr/inria-00458909</a>	yes
42	Security-by-Contract-with-Trust for Mobile Devices	Gabriele Costa	Journal of Wireless Mobile Networks, Ubiquitous Computing and Dependable Applications (JoWUA)	2010	(JoWUA)	-	2010	75-91	<a href="http://hal.inria.fr/inria-00549662">http://hal.inria.fr/inria-00549662</a>	yes
43	Applying MDE Tools at Runtime: Experiments upon Runtime Models	Hui Song	Proceedings of the 5th International Workshop on Models at Run Time	2010		NW	2010		<a href="http://hal.inria.fr/inria-00560785">http://hal.inria.fr/inria-00560785</a>	yes
44	Inferring Meta-Models for Runtime System Data from the Clients of Management APIs	Hui Song	Proceedings of the 13th International conference on Model-driven Engineering Languages and Systems (MODELS 2010)	2010	Springer Berlin/Hidelberg	NW	2010		<a href="http://hal.inria.fr/inria-00513246">http://hal.inria.fr/inria-00513246</a>	yes

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45	Supporting Runtime Software Architecture: A Bidirectional-Transformation-Based Approach	Hui Song	Journal of Systems and Software	2010	Elvisier	-	2010	0	<a href="http://hal.inria.fr/inria-00560783">http://hal.inria.fr/inria-00560783</a>	yes
46	Formal approach to security metrics. What does "more secure" mean for you?*	Leanid Krautsevich	2010 IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications	2010		CHN	2010		<a href="http://hal.inria.fr/inria-00536758">http://hal.inria.fr/inria-00536758</a>	yes
47	Towards Accuracy of Role-Based Access Control Configurations in Component-based Systems	Lianshan Sun	Journal of Systems Architecture	2010	Elsevier	-	2010		<a href="http://hal.inria.fr/inria-00560784">http://hal.inria.fr/inria-00560784</a>	yes
48	Compositional Verification of Probabilistic Systems using Learning	Lu Feng	7th International Conference on Quantitative Evaluation of Systems (QEST'10)	2010		USA	2010	pages 133-142	<a href="http://hal.inria.fr/inria-00531203">http://hal.inria.fr/inria-00531203</a>	yes

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49	Synthesizing adapters for conversational web-services from their WSDL interface	Luca Cavallaro	In ICSE 2010 SEAMS: Workshop on Software Engineering for Adaptive and Self-Managing Systems	2010		ZAF	2010	104-113	<a href="http://hal.inria.fr/inria-00512413">http://hal.inria.fr/inria-00512413</a>	yes
50	Towards a Connector Algebra	Marco Autili	In Proceedings of the 4th International Symposium on Leveraging Applications (ISoLA 2010) of Formal Methods, Verification and Validation	2010		GR	2010		<a href="http://hal.inria.fr/inria-00512431">http://hal.inria.fr/inria-00512431</a>	yes
51	Run time models in adaptive service infrastructure	Marco Autili	NULL	2010	Springer	-	2010		<a href="http://hal.inria.fr/inria-00512432">http://hal.inria.fr/inria-00512432</a>	yes
52	Assume-Guarantee Verification for Probabilistic Systems	Marta Kwiatkowska	TACAS 2010 : 16th International Conference on Tools and Algorithms for the Construction and Analysis of Systems	2010	Springer	CHY	2010		<a href="http://hal.inria.fr/inria-00458058">http://hal.inria.fr/inria-00458058</a>	yes
53	Parallel Model Checking for Temporal Epistemic Logic	Marta Kwiatkowska	European Conference on Artificial Intelligence	2010		PT	2010		<a href="http://hal.inria.fr/inria-00536670">http://hal.inria.fr/inria-00536670</a>	yes
54	Learning of Event-Recording Automata	Olga Grinchtein	Theoretical Computer Science	2010	Elsevier	-	2010		<a href="http://hal.inria.fr/inria-00459696">http://hal.inria.fr/inria-00459696</a>	yes



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55	A Theory of Mediators for Eternal Connectors	Paola Inverardi	ISoLA 2010 - 4th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation	2010		GR	2010	236-250	<a href="http://hal.inria.fr/inria-00512443">http://hal.inria.fr/inria-00512443</a>	yes
56	When Simulation Meets Antichains	Parosh Aziz Abdulla	TACAS'10, the 16th International Conference on Tools And Algorithms for the Construction and Analysis of Systems	2010		CHY	2010		<a href="http://hal.inria.fr/inria-00460294">http://hal.inria.fr/inria-00460294</a>	yes
57	Mediating Connector Patterns for Components Interoperability	Romina Spalazzese	In Proceedings of the European Conference on Software Architecture (ECSA)2010	2010	NULL	DNK	2010	335-343	<a href="http://hal.inria.fr/inria-00512435">http://hal.inria.fr/inria-00512435</a>	yes
58	Components Interoperability through Mediating Connector Patterns	Spalazzese Romina	In Proceedings WCSI 2010 - Workshop on Component and Service Interoperability, EPTCS	2010		ESP	2010		<a href="http://hal.inria.fr/inria-00512436">http://hal.inria.fr/inria-00512436</a>	yes
59	Service Encapsulation for Middleware Management Interfaces	Xing Chen	Proceedings of the 5th IEEE International Symposium on Service Oriented System Engineering (SOSE 2010)	2010	IEEE Computer Society	USA	2010	272-279	<a href="http://hal.inria.fr/inria-00513292">http://hal.inria.fr/inria-00513292</a>	yes

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60	Automatic Service Categorisation through Machine Learning in Emergent Middleware	Amel Bennaceur	FMCO - Formal Methods for Components and Objects	2011	Springer	ITA	2011		<a href="http://hal.inria.fr/hal-00718655">http://hal.inria.fr/hal-00718655</a>	yes
61	Inferring Affordances Using Learning Techniques	Amel Bennaceur	International Workshop on Eternal Systems (EternalS'11)	2011		HUN	2011		<a href="http://hal.inria.fr/inria-00591264">http://hal.inria.fr/inria-00591264</a>	yes
62	Proximity-Based Trust Inference for Mobile Social Networking	Amir Seyedi	IFIPTM 2011 - 5th IFIP WG 11.11 International Conference on Trust Management	2011	Springer Boston	DNK	2011	253-264	<a href="http://hal.inria.fr/inria-00617630">http://hal.inria.fr/inria-00617630</a>	yes
63	Yet Another Meta-Model to specify Non-Functional Properties	Antinisca Di Marco	International Workshop on Quality Assurance for Service-Based Applications (QASBA 2011)	2011		CH	2011		<a href="http://hal.inria.fr/hal-00647360">http://hal.inria.fr/hal-00647360</a>	yes
64	Automated Refinement of Dependability Analysis through Monitoring in Dynamically Connected Systems	Antonia Bertolino	International Symposium on Autonomous Decentralized Systems (ISADS) 2011	2011	Springer	JP	2011		<a href="http://hal.inria.fr/inria-00573405">http://hal.inria.fr/inria-00573405</a>	yes

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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
65	Dependability and Performance Assessment of Dynamic CONNECTed Systems	Antonia Bertolino	11th International School SFM 2011	2011		ITA	2011	pp. 350-392	<a href="http://hal.inria.fr/hal-00649205">http://hal.inria.fr/hal-00649205</a>	yes
66	GLIMPSE: A Generic and Flexible Monitoring Infrastructure	Antonia Bertolino	13th European Workshop on Dependable Computing (EWDC)	2011		ITA	2011		<a href="http://hal.inria.fr/hal-00647355">http://hal.inria.fr/hal-00647355</a>	yes
67	Towards a Model-Driven Infrastructure for Runtime Monitoring	Antonia Bertolino	3rd International Workshop on Software Engineering for Resilient Systems	2011		CH	2011		<a href="http://hal.inria.fr/hal-00647363">http://hal.inria.fr/hal-00647363</a>	yes
68	Dependability and Performance Assessment of Dynamic CONNECTed Systems	Antonia Bertolino		2011	Springer	-	2011		<a href="http://hal.inria.fr/hal-00647701">http://hal.inria.fr/hal-00647701</a>	yes
69	Introduction to Active Automata Learning from a Practical Perspective	B. Steffen	Formal Methods for Eternal Networked Software Systems, SFM 2011	2011	Springer Verlag	ITA	2011	256-296	<a href="http://hal.inria.fr/hal-00647729">http://hal.inria.fr/hal-00647729</a>	yes

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70	Learning of Automata Models Extended with Data	Bengt Jonsson	SFM-11	2011		ITA	2011		<a href="http://hal.inria.fr/hal-00647576">http://hal.inria.fr/hal-00647576</a>	yes
71	Starlink: runtime interoperability between heterogeneous middleware protocols	David Bromberg	The 31st International Conference on Distributed Computing Systems (ICDCS 2011)	2011		USA	2011		<a href="http://hal.inria.fr/inria-00594307">http://hal.inria.fr/inria-00594307</a>	yes
72	AmbiStream: A Middleware for Multimedia Streaming on Heterogeneous Mobile Devices	Emil - Mircea Andriescu	ACM/IFIP/USENIX 12th International Middleware Conference	2011	Springer	PT	2011		<a href="http://hal.inria.fr/hal-00639633">http://hal.inria.fr/hal-00639633</a>	yes
73	Preserving Security Properties under Refinement	Fabio Martinelli	ICSE	2011		USA	2011		<a href="http://hal.inria.fr/hal-00661621">http://hal.inria.fr/hal-00661621</a>	yes
74	Automata Learning with Automated Alphabet Abstraction Refinement	Falk Howar	Twelfth International Conference on Verification, Model Checking, and Abstract Interpretation, VMCAI 2011	2011		USA	2011		<a href="http://hal.inria.fr/hal-00647711">http://hal.inria.fr/hal-00647711</a>	yes

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75	Trust-Driven Policy Enforcement through Gate Automata	G. Costa	Fifth International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing	2011		KR	2011		<a href="http://hal.inria.fr/hal-00661572">http://hal.inria.fr/hal-00661572</a>	yes
76	Modular Plans for Secure Service Composition	Gabriele Costa	Automated Reasoning for Security Protocol Analysis and Issues in the Theory of Security	2011		CHY	2011	41-58	<a href="http://hal.inria.fr/inria-00536652">http://hal.inria.fr/inria-00536652</a>	yes
77	Security and Trust	Gabriele Costa	SFM'11 - 11 th International School on Formal Methods for the Design of Computer, Communication and Software	2011		ITA	2011	393-416	<a href="http://hal.inria.fr/hal-00646860">http://hal.inria.fr/hal-00646860</a>	yes
78	Towards Architecture-Level Middleware-Enabled Exception Handling of Component-based Systems	Gang Huang	The 14th International ACM SIGSOFT Symposium on Component Based Software Engineering (CBSE-2011)	2011		USA	2011		<a href="http://hal.inria.fr/hal-00646839">http://hal.inria.fr/hal-00646839</a>	yes

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79	Simulation Based Analysis Of Middleware Service Impact On System Reliability: Experiment On Java Application Server	Gang Huang	Journal of Systems and Software	2011	Elsevier	-	2011	1160-1170	<a href="http://hal.inria.fr/hal-00644654">http://hal.inria.fr/hal-00644654</a>	yes
80	The Role of Ontologies in Emergent Middleware: Supporting Interoperability in Complex Distributed Systems	Gordon Blair	Middleware 2011 - 12th International Middleware Conference	2011		PT	2011		<a href="http://hal.inria.fr/inria-00629059">http://hal.inria.fr/inria-00629059</a>	yes
81	Interoperability in Complex Distributed Systems	Gordon Blair	NULL	2011	Springer	-	2011		<a href="http://hal.inria.fr/inria-00629057">http://hal.inria.fr/inria-00629057</a>	yes

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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
82	Partial order reduction for model checking Markov decision processes under unconditional fairness	Henri Hansen	8th International Conference on Quantitative Evaluation of SysTems (QEST'11)	2011		GER	2011	203-212	<a href="http://hal.inria.fr/hal-00647059">http://hal.inria.fr/hal-00647059</a>	yes
83	Instant and Incremental QVT Transformation for Runtime Models	Hui Song	MODELS 2011	2011		NZ	2011		<a href="http://hal.inria.fr/hal-00646844">http://hal.inria.fr/hal-00646844</a>	yes
84	Risk-based Auto-Delegation for Probabilistic Availability	Leanid Krautsevic	4th International Workshop on Autonomous and Spontaneous Security (SETOP)	2011		BEL	2011		<a href="http://hal.inria.fr/inria-00616450">http://hal.inria.fr/inria-00616450</a>	yes
85	Automated Learning of Probabilistic Assumptions for Compositional Reasoning	Lu Feng	14th International Conference on Fundamental Approaches to Software Engineering (FASE'11)	2011	Springer	GER	2011	2--17	<a href="http://hal.inria.fr/hal-00647067">http://hal.inria.fr/hal-00647067</a>	yes
86	Learning-based Compositional Verification for Synchronous Probabilistic Systems	Lu Feng	9th International Symposium on Automated Technology for Verification and Analysis (ATVA'11)	2011	Springer	TW	2011	511--521	<a href="http://hal.inria.fr/hal-00647061">http://hal.inria.fr/hal-00647061</a>	yes

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87	Next Generation LearnLib	Maik Merten	17th International Conference on Tools and algorithms for the construction and analysis of systems, TACAS 2011	2011		GR	2011		<a href="http://hal.inria.fr/hal-00647749">http://hal.inria.fr/hal-00647749</a>	yes
88	Incremental Quantitative Verification for Markov Decision Processes	Marta Kwiatkowska	IEEE/IFIP International Conference on Dependable Systems and Networks (DSN-PDS'11)	2011	IEEE CS Press	HK	2011	359--370	<a href="http://hal.inria.fr/hal-00647057">http://hal.inria.fr/hal-00647057</a>	yes
89	PRISM 4.0: Verification of Probabilistic Real-time Systems	Marta Kwiatkowska	23rd International Conference on Computer Aided Verification (CAV'11)	2011	Springer	USA	2011	585--591	<a href="http://hal.inria.fr/hal-00648035">http://hal.inria.fr/hal-00648035</a>	yes
90	Run-time Resolution of Uncertainty	Nelly Bencomo	International Requirements Engineering Conference,, RE 2011	2011		ITA	2011		<a href="http://hal.inria.fr/inria-00623785">http://hal.inria.fr/inria-00623785</a>	yes
91	Tracing Requirements for Adaptive Systems using Claims	Nelly Bencomo	6th International Workshop on Traceability in Emerging Forms of Software Engineering	2011		USA	2011		<a href="http://hal.inria.fr/inria-00623812">http://hal.inria.fr/inria-00623812</a>	yes



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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
92	On enabling dependability assurance in heterogeneous networks through automated model-based analysis	Paolo Masci	3rd International Workshop on Software Engineering for Resilient Systems	2011		CH	2011		<a href="http://hal.inria.fr/hal-00647365">http://hal.inria.fr/hal-00647365</a>	yes
93	Towards Automated Dependability Analysis of Dynamically Connected Systems	Paolo Masci	International Symposium on Autonomous Decentralized Systems (ISADS) 2011	2011		JP	2011		<a href="http://hal.inria.fr/inria-00573410">http://hal.inria.fr/inria-00573410</a>	yes
94	Advanced Ramsey-based Büchi Automata Inclusion Testing	Parosh Aziz Abdulla	CONCUR	2011		GER	2011	NULL	<a href="http://hal.inria.fr/hal-00647523">http://hal.inria.fr/hal-00647523</a>	yes
95	The CONNECT Architecture	Paul Grace	NULL	2011	Springer	-	2011	27-52	<a href="http://hal.inria.fr/inria-00586638">http://hal.inria.fr/inria-00586638</a>	yes
96	Composing Trust Models towards Interoperable Trust Management	Rachid Saadi	5th IFIP WG 11.11 International Conference on Trust Management	2011	Springer	DK	2011	51-66	<a href="http://hal.inria.fr/inria-00617629">http://hal.inria.fr/inria-00617629</a>	yes

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97	Dynamic QoS Management and Optimisation in Service-Based Systems	Radu Calinescu	IEEE Transactions on Software Engineering	2011	IEEE	-	2011	387-409	<a href="http://hal.inria.fr/hal-00663216">http://hal.inria.fr/hal-00663216</a>	yes
98	Negotiation on mobile devices using Weighted RTML Credentials	Stefano Bistarelli	ItAIS 2011	2011	Springer	ITA	2011		<a href="http://hal.inria.fr/hal-00660182">http://hal.inria.fr/hal-00660182</a>	yes
99	Middleware-layer Connector Synthesis: Beyond State of the Art in Middleware Interoperability	Valérie Issarny		2011	Springer	-	2011	217-255	<a href="http://hal.inria.fr/inria-00586630">http://hal.inria.fr/inria-00586630</a>	yes
100	The Role of Ontologies in Enabling Dynamic Interoperability	Vatsala Nundloll	11th IFIP International Conference on Distributed Applications and Interoperable Systems	2011		IS	2011		<a href="http://hal.inria.fr/inria-00594301">http://hal.inria.fr/inria-00594301</a>	yes
101	Quantitative Multi-Objective Verification for Probabilistic Systems	Vojtech Forejt	17th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS'11)	2011	Springer	GER	2011	112--127	<a href="http://hal.inria.fr/hal-00647055">http://hal.inria.fr/hal-00647055</a>	yes

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102	Automated Verification Techniques for Probabilistic Systems	Vojtech Forejt	NULL	2011	Springer	-	2011	53--113	<a href="http://hal.inria.fr/hal-00648037">http://hal.inria.fr/hal-00648037</a>	yes
103	Bridging the Interoperability Gap: Overcoming Combined Application and Middleware Heterogeneity	Yérom-David Bromberg	12thth IFIP/ACM/USENIX International Middleware Conference	2011		PT	2011		<a href="http://hal.inria.fr/hal-00643601">http://hal.inria.fr/hal-00643601</a>	yes
104	Achieving Interoperability through Semantics-based Technologies: The Instant Messaging Case	Amel Bennaceur	ISWC 2012 - 11th International Semantic Web Conference	2012		USA	2012	NULL	<a href="http://hal.inria.fr/hal-00721280">http://hal.inria.fr/hal-00721280</a>	yes
105	Machine Learning for Emergent Middleware	Amel Bennaceur	JIMSE- Joint workshops on Intelligent Methods for Software System Engineering	2012		FR	2012		<a href="http://hal.inria.fr/hal-00722051">http://hal.inria.fr/hal-00722051</a>	yes

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106	Automated Synthesis of CONNECTors to support Software Evolution	Amel Bennaceur	ERCIM News	2012	ERCIM	-	2012		<a href="http://hal.inria.fr/hal-00662058">http://hal.inria.fr/hal-00662058</a>	yes
107	Complex Events Specification for Properties Validation	Antonia Bertolino	8th International Conference on the Quality of Information and Communications Technology	2012		PT	2012		<a href="http://hal.inria.fr/hal-00728548">http://hal.inria.fr/hal-00728548</a>	yes
108	On-the-Fly Dependable Mediation between Heterogeneous Networked Systems	Antonia Bertolino	NULL	2012	Springer-Verlag	-	2012	20-37	<a href="http://hal.inria.fr/hal-00758416">http://hal.inria.fr/hal-00758416</a>	yes
109	Never-stop Learning: Continuous Validation of Learned Models for Evolving Systems through Monitoring	Bertolino A.	ERCIM News	2012	ERCIM	-	2012		<a href="http://hal.inria.fr/hal-00661027">http://hal.inria.fr/hal-00661027</a>	yes

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110	Never-stop Learning: Continuous Validation of Learned Models for Evolving Systems through Monitoring	Calabrò A.	ERCIM News	2012	ERCIM	-	2012		<a href="http://hal.inria.fr/hal-00661027">http://hal.inria.fr/hal-00661027</a>	yes
111	SeDiM: A Middleware Framework for Interoperable Service Discovery in Heterogeneous Networks	Carlos Flores	ACM Transactions on Autonomous and Adaptive	2012	ACM	-	2012	6:1-6:8	<a href="http://hal.inria.fr/hal-00659777">http://hal.inria.fr/hal-00659777</a>	yes
112	Assume-Guarantee Reasoning for Safe Component Behaviours	Chris Chilton	9th International Symposium on Formal Aspects of Component Software	2012		USA	2012	98-115	<a href="http://hal.inria.fr/hal-00740073">http://hal.inria.fr/hal-00740073</a>	yes
113	Revisiting Timed Specification Theories: A Linear-Time Perspective	Chris Chilton	10th International Conference on Formal Modeling and Analysis of Timed Systems	2012	Springer	UK	2012	75-90	<a href="http://hal.inria.fr/hal-00739584">http://hal.inria.fr/hal-00739584</a>	yes

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114	Quantitative access control with partially-observable Markov decision processes	Fabio Martinelli	second ACM conference on Data and Application Security and Privacy	2012		USA	2012		<a href="http://hal.inria.fr/hal-00757224">http://hal.inria.fr/hal-00757224</a>	yes
115	Inferring Canonical Register Automata	Falk Howar	NULL	2012	Springer Berlin / Heidelberg	-	2012	251-266	<a href="http://hal.inria.fr/hal-00664277">http://hal.inria.fr/hal-00664277</a>	yes
116	Towards Architecture-based Management of Platforms in Cloud	Gang Huang	Journal of Frontiers of Computer Science	2012	Springer	-	2012	388-397	<a href="http://hal.inria.fr/hal-00749181">http://hal.inria.fr/hal-00749181</a>	yes
117	Emergent Middleware: Tackling the Interoperability Problem	Gordon Blair	Internet Computing, IEEE	2012	IEEE	-	2012	78 - 82	<a href="http://hal.inria.fr/hal-00659768">http://hal.inria.fr/hal-00659768</a>	yes
118	Internetware: A Software Paradigm for Internet Computing	Hong Mei	IEEE COMPUTER	2012	IEEE Computer Society	-	2012		<a href="http://hal.inria.fr/hal-00751219">http://hal.inria.fr/hal-00751219</a>	yes

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119	Inferring the Data Access from the Clients of Generic APIs	Hui Song	ICSM2012	2012		ITA	2012		<a href="http://hal.inria.fr/hal-00749177">http://hal.inria.fr/hal-00749177</a>	yes
120	Risk-based security decisions under uncertainty	Ian Molloy	Proceedings of the second ACM conference on Data and Application Security and Privacy	2012	ACM	USA	2012	157--168	<a href="http://hal.inria.fr/hal-00757539">http://hal.inria.fr/hal-00757539</a>	yes
121	Gate automata-driven run-time enforcement	Ilaria Matteucci	Computers & Mathematics with Applications	2012	Elsevier	-	2012		<a href="http://hal.inria.fr/hal-00661568">http://hal.inria.fr/hal-00661568</a>	yes
122	Satisfying Requirements for Pervasive Service Compositions	Luca Cavallaro	7th International Workshop on Models@run.time (MRT 2012)	2012	ACM	AT	2012		<a href="http://hal.inria.fr/hal-00733346">http://hal.inria.fr/hal-00733346</a>	yes
123	On Incremental Quantitative Verification for Probabilistic Systems	Marta Kwiatkowska	High-order workshop on automated runtime verification and debugging	2012		UK	2012		<a href="http://hal.inria.fr/hal-00740112">http://hal.inria.fr/hal-00740112</a>	yes
124	The PRISM Benchmark Suite	Marta Kwiatkowska	9th International Conference on Quantitative Evaluation of SysTems	2012		UK	2012	203-204	<a href="http://hal.inria.fr/hal-00740727">http://hal.inria.fr/hal-00740727</a>	yes

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125	Advances in Probabilistic Model Checking	Marta Kwiatkowska	Software Safety and Security - Tools for Analysis and Verification, volume 33 of NATO Science for Peace and Security Series - D: Information and Communication Security	2012	IOS Press	-	2012	126-151	<a href="http://hal.inria.fr/hal-00664777">http://hal.inria.fr/hal-00664777</a>	yes
126	The Role of Models@runtime in Supporting On-the-fly Interoperability	Nelly Bencomo	Computing	2012	Springer	-	2012		<a href="http://hal.inria.fr/hal-00733338">http://hal.inria.fr/hal-00733338</a>	yes
127	Reusing System States by Active Learning Algorithms	Oliver Bauer	Eternal Systems	2012	Springer Verlag	HUN	2012	61-78	<a href="http://hal.inria.fr/hal-00664310">http://hal.inria.fr/hal-00664310</a>	yes
128	Emergent Middleware	Paul Grace	ERCIM News	2012	ERCIM	-	2012	27-28	<a href="http://hal.inria.fr/hal-00659762">http://hal.inria.fr/hal-00659762</a>	yes
129	How the Web of Things Challenges Requirements Engineering	Pete Sawyer	3rd Workshop on The Web and Requirements Engineering at 12th International Conference on Web Engineering ICWE 20102	2012		GER	2012		<a href="http://hal.inria.fr/hal-00722382">http://hal.inria.fr/hal-00722382</a>	yes
130	Self-adaptive software needs quantitative verification at runtime	Radu Calinescu	Communications of the ACM	2012	Moshe Y. Vardi	-	2012	69-77	<a href="http://hal.inria.fr/hal-00748130">http://hal.inria.fr/hal-00748130</a>	yes



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131	Self-adaptive software needs quantitative verification at runtime	Radu Calinescu	Communications of the ACM	2012	Moshe Y. Vardi	-	2012	69-77	<a href="http://hal.inria.fr/hal-00748130">http://hal.inria.fr/hal-00748130</a>	yes
132	A Semiring-based Framework for the Deduction/Abduction Reasoning in Access Control with Weighted Credentials	Stefano Bistarelli	Computer and mathematics with applications	2012	Elsevier	-	2012		<a href="http://hal.inria.fr/hal-00662587">http://hal.inria.fr/hal-00662587</a>	yes
133	A Compositional Specification Theory for Component Behaviours	Taolue Chen	21st European Symposium on Programming	2012	Springer	-	2012	148-168	<a href="http://hal.inria.fr/hal-00665599">http://hal.inria.fr/hal-00665599</a>	yes
134	Incremental Runtime Verification of Probabilistic Systems	Vojtech Forejt	Runtime verification	2012	Springer	TR	2012	314-319	<a href="http://hal.inria.fr/hal-00739483">http://hal.inria.fr/hal-00739483</a>	yes

**LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS, STARTING WITH THE MOST IMPORTANT ONES**All the CONNECT publications are released at the open archive HAL site at <http://hal.inria.fr/CONNECT>

NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
135	Refactoring Android Java Code for On-Demand Computation Offloading	Wei Zhang	OOPSLA 2012	2012		USA	2012		<a href="http://hal.inria.fr/hal-00751656">http://hal.inria.fr/hal-00751656</a>	yes
136	Maximal Confluent Processes	Xu Wang	33rd International Conference on Application and Theory of Petri Nets and Concurrency	2012	Springer	GER	2012	188-207	<a href="http://hal.inria.fr/hal-00740738">http://hal.inria.fr/hal-00740738</a>	yes
137	Model Driven Configuration of Fault Tolerance Solutions for Component-Based Software System	Yihan Wu	MODELS 2012	2012		AT	2012		<a href="http://hal.inria.fr/hal-00748867">http://hal.inria.fr/hal-00748867</a>	yes
138	Refactoring Android Java Code for On-Demand Computation Offloading	Ying Zhang	OOPSLA 2012	2012		USA	2012		<a href="http://hal.inria.fr/hal-00751656">http://hal.inria.fr/hal-00751656</a>	yes

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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
139	An approach to adaptive dependability assessment in dynamic and evolving connected systems	Antonia Bertolino	International Journal of Adaptive, Resilient and Autonomic Systems (IJARAS)	2013	IGI Book	-	2013		<a href="http://hal.inria.fr/hal-00758396">http://hal.inria.fr/hal-00758396</a>	Yes
140	Ensuring dependability and security of dynamically connected systems,	Sabetta A.	Panel at ICECCS 2009	June 2-4 2009	IEEE		2009			No
141	A Succinct Canonical Register Automaton Model	S. Cassel	9th International Symposium on Automated Technology for Verification and Analysis, ATVA 2011	2011		Taipei, Taiwan, Province De Chine	2011	366-380	<a href="http://hal.inria.fr/hal-00647724">http://hal.inria.fr/hal-00647724</a>	yes
142	A Succinct Canonical Register Automaton Model for Data Domains with Binary Relations	Sofia Cassel	10th International Symposium on Automated Technology for Verification and Analysis, ATVA 2012	2012		Thiruvananthapuram, India	2012	57-71	<a href="http://hal.inria.fr/hal-00766825">http://hal.inria.fr/hal-00766825</a>	yes

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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
143	Demonstrating Learning of Register Automata	Maik Merten	18th International Conference, TACAS 2012	2012		Tallinn , Estonie	2012		<a href="http://hal.inria.fr/hal-00767337">http://hal.inria.fr/hal-00767337</a>	yes
144	Automata Learning with On-the-Fly Direct Hypothesis Construction	Maik Merten	ISoLa 2011	2011		Vienna , Autriche	2011		<a href="http://hal.inria.fr/hal-00767411">http://hal.inria.fr/hal-00767411</a>	yes
145	Generating Models of Infinite-State Communication Protocols using Regular Inference with Abstraction	Fides Aarts	IFIP International Conference on Testing Software and Systems (ICTSS)	2010		Natal, Brésil	2010		<a href="http://hal.inria.fr/hal-00767416">http://hal.inria.fr/hal-00767416</a>	yes
146	The Teachers' Crowd: The Impact of Distributed Oracles on Active Automata Learning	Falk Howar	ISoLa 2011	2011		Vienna , Autriche	2011		<a href="http://hal.inria.fr/hal-00767424">http://hal.inria.fr/hal-00767424</a>	yes

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NO.	Title	Main author	Title of the periodical or the series	Nb, Date or Freq.	Publisher	Place	Year	Pages	Permanent identifiers	Open Access (y/n)
147	LearnLib Tutorial: From Finite Automata to Register Interface Programs	Falk Howar	ISoLa 2012	2012		Heraklion, Grèce	2012		<a href="http://hal.inria.fr/hal-00767425">http://hal.inria.fr/hal-00767425</a>	yes
148	Automated Learning Setups in Automata Learning	Maik Merten	ISoLa 2012	2012		Heraklion, Grèce	2012		<a href="http://hal.inria.fr/hal-00767428">http://hal.inria.fr/hal-00767428</a>	yes
149	Inferring compact models of communication protocol entities	Therese Bohlin	ISoLa 2010	2010		Heraklion, Grèce	2010		<a href="http://hal.inria.fr/hal-00767431">http://hal.inria.fr/hal-00767431</a>	yes
150	Simulation Subsumption in Ramsey-Based Büchi Automata Universality and Inclusion Testing	Parosh Aziz Abdulla	Computer Aided Verification (CAV)	2010		Edinburgh, Royaume-Uni	2010		<a href="http://hal.inria.fr/hal-00767433">http://hal.inria.fr/hal-00767433</a>	yes
151	Active Automata Learning: From DFAs to Interface Programs and Beyond	Bernhard Steffen	ICGI 2012	2012		Washington, D.C., États-Unis	2012		<a href="http://hal.inria.fr/hal-00767446">http://hal.inria.fr/hal-00767446</a>	Yes

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<b>NO.</b>	<b>Title</b>	<b>Main author</b>	<b>Title of the periodical or the series</b>	<b>Nb, Date or Freq.</b>	<b>Publisher</b>	<b>Place</b>	<b>Year</b>	<b>Pages</b>	<b>Permanent identifiers</b>	<b>Open Access (y/n)</b>
152	Advances and Challenges of Probabilistic Model Checking	Marta Kwiatkowska	48th Annual Allerton Conference on Communication, Control and Computing	2010	IEEE Press	USA	2010	1691-1698	<a href="http://hal.inria.fr/hal-00767474">http://hal.inria.fr/hal-00767474</a>	yes
153	A Framework for Verification of Software with Time and Probabilities	Marta Kwiatkowska	8th International Conference on Formal Modelling and Analysis of Timed Systems	2010	Springer		2010	25-45	<a href="http://hal.inria.fr/hal-00767473">http://hal.inria.fr/hal-00767473</a>	yes

**LIST OF DISSEMINATION ACTIVITIES**

<b>NO.</b>	<b>Type of activities</b>	<b>Main leader</b>	<b>Title</b>	<b>Date/Period</b>	<b>Place</b>	<b>Type of audience</b>	<b>Size of audience</b>	<b>Countries addressed</b>
1	Summer school	Valerie Issarny	CONNECT Summer school - The 11th International School on Formal Methods for the Design of Computer, Communication and Software Systems: Connectors for Eternal Networked Software Systems	June 2011	Bertinoro, Italy	Scientific Community	40	International
2	Workshop	Valerie Issarny	Future of Middleware at Middleware'2011	December 2011	Lisboa, Portugal	Scientific Community	60	International
3	Keynote at Notere 2011	Gordon Blair	Revisiting Interoperability: The Case for Emergent Middleware	May 2011	Paris, France	Scientific Community		International
4	Keynote at 4th International ICST Conference on MOBILE Wireless MiddleWARE, Operating Systems, and Applications	Gordon Blair	Revisiting Interoperability: The Case for Emergent Middleware	June 2011	London, UK	Scientific Community		International

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5	Keynote at 6th international workshop on Middleware Tools, Services and Run-time Support for Networked Embedded Systems (MidSens'11	Paul Grace	Revisiting the Interoperability Problem: from sensors to complex systems of systems	December 2011	Lisbon, Portugal	Scientific Community		International
6	Keynote at ACM Mobility 2009	Gordon Blair	From Mobility to Ubiquity and Beyond	September 2009	Sophia Antipolis, France	Scientific Community		International
7	Invited talk at Autonomics 2009	Paul Grace	Emergent Middleware: Rethinking Interoperability for Complex Systems	September 2009	Cyprus	Scientific Community		International
8	Keynote at ACM Sigops CFSE	Gordon Blair	Connect	January 2013	Grenoble, France	Scientific Community		International
7	Seminar at U. Telecom Sud Paris	Gordon Blair	Connect	May 2012	Paris, France	Scientific Community		International
8	Seminar at Imperial College London	Paul Grace	The Quest for Future Proof Interoperability	April 2012	London, UK	Scientific Community		International
9	Seminar at U. Bordeaux	Paul Grace	The Quest for Future Proof Interoperability	May 2012	Bordeaux, France	Scientific Community		International
10	Summer School	Marta Kwiatkowska	Summer School on Model Checking	October 2010	Beijing, China	Scientific Community	100	International



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11	Summer School	Marta Kwiatkowska	Advanced Course on Petri Nets	September 2010	Rostock, Germany	Scientific Community	100	International
12	Summer School	Marta Kwiatkowska	Summer School 2010: Verification Technology, Systems & Applications	6 - 10 September 2010	Luxemburg	Scientific Community	100	International
13	Summer School	Marta Kwiatkowska	European Summer School of Logic, Language and Information	August 2010	Copenhagen, Denmark	Scientific Community	100	International
14	Other (Summer School)	Marta Kwiatkowska	NATO Marktoberdorf Summer School: Tools for Analysis and Verification of Software Safety and Security	2 - 14 August 2011	Marktoberdorf, Germany	Scientific Community	100	International
15	Autumn School	Marta Kwiatkowska	ROCKS Autumn School: RigorOus dependability analysis using model CheckIng techniques for	22-26 October 2012	Vahrn, Italy	Scientific Community	50	International

**LIST OF DISSEMINATION ACTIVITIES**

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			Stochastic systems					
16	Presentation	Marta Kwiatkowska	Milner Lecture	September 2012	Edinburgh, UK	Scientific Community	200	UK
17	Presentation	Marta Kwiatkowska	Lecture at Academia Sinica	2011	Taiwan, China	Scientific Community	50	China
18	Presentation	Marta Kwiatkowska	Lecture at National University of Singapore	2011	Singapore	Scientific Community	50	Singapore
19	Presentation	Marta Kwiatkowska	Lecture at University of Tokyo	Feb 2012	Tokyo, Japan	Scientific Community	50	Japan
20	Presentation	Marta Kwiatkowska	Lecture at Tsinghua University	Feb 2012	Beijing, China	Scientific Community	50	China
21	Presentation	Marta Kwiatkowska	Lecture at California Institute of Technology	Feb 2012	Pasadena, USA	Scientific Community	30	USA
22	Presentation	Marta Kwiatkowska	Lecture at University of California, Los Angeles	Feb 2012	Los Angeles, USA	Scientific Community	30	USA
23	Presentation	Marta Kwiatkowska	Lecture at University of British Columbia	March 2012	Vancouver, Canada	Scientific Community	30	Canada
24	Presentation	Marta Kwiatkowska	ACCESS Distinguished	28 January 2010	Stockholm, Sweden	Scientific Community	100	Sweden

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			Lecture					
25	Presentation	Marta Kwiatkowska	BCS-FACS Seminar	19 October 2009	London, UK	Scientific Community	80	UK
26	Keynote speech at TOOLS'2010	Valerie Issarny	From Middleware to on the Fly Connector Synthesis for the Dynamic Composition of Pervasive Software Intensive Networked Systems	June 2010	Malaga	Scientific community		International
27	Invited talk at VIDAS'2010	Valerie Issarny	On the Fly Connector Synthesis: Challenges for Verification & Validation	April 2010	Paris, France	Scientific community		International
28	Invited lecture at UCM'2011	Valerie Issarny	Revisiting the Middleware Paradigm to Meet the Challenge of Interoperability in Pervasive Networks	June 2011	Fribourg, Switzerland	Scientific community		International

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29	Tech briefing at ESEC/FSE'2011	Valerie Issarny	Model-based Emergent Middleware to Meet the Challenges of Interoperability in Pervasive Networks	September 2011	Szeged, Hungary	Scientific community		International
30	Invited lecture at SERENE'2011	Valerie Issarny	Towards Future Proof Interoperability	September 2011	Genva, Switzerland	Scientific community		International
31	Workshop	Amel Bennaceur	Shonan meeting	May 2012	Shonan, Japan	Scientific community	40	International
32	Summer School	B. Jonsson	UPMARC Summer School	June 2009	Uppsala	Academy/Ind.	70	International
33	Summer School	B. Jonsson	UPMARC Summer School	June 2010	Uppsala	Academy/Ind.	60	International
34	Summer School	B. Jonsson	UPMARC Summer School	June 2011	Uppsala	Academy/Ind.	85	International
35	Summer School	B. Jonsson	UPMARC Summer School	June 2012	Uppsala	Academy/Ind.	75	International
36	Presentation at the Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems.	A. Di Marco	Towards a Stem Architecture Description Language for Self-Adaptive Systems	September 2010	Budapest	Scientific community		International
37	Presentation at ESEC/FSE'2011	P. Inverardi	Exploiting Software	September 2011	Hungary	Scientific community		International

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			Architecture to support Requirements satisfaction Testing					
38	Lecture at the SFM'11 International School	P. Inverardi	Application-layer Connector Synthesis	June 2011	Bertinoro	Scientific Community		International
39	Presentation at SEFM 2011	P. Inverardi	Leveraging State-Based User Preferences in Context-Aware Reconfigurations for Self-Adaptive Systems	November 2011	Montevideo	Scientific Community		International
40	Presentation at the 17 <sup>th</sup> Monterey Workshop	P. Inverardi	Integration architecture synthesis for taming uncertainty in the Digital Space	March 2012	Oxford	Scientific Community		International
41	Keynote presentation at DisCoTec 2012	Bengt Jonsson	Model Generation through Automata Learning	13-16 June 2012	Stockholm, Sweden	Scientific Community		International
42	Lectures delivered at MOVEP	Bengt	Testing and	June 28-July 2	Aachen,	Academy/Ind.		International

**LIST OF DISSEMINATION ACTIVITIES**

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	2010	Jonsson	Model Generation	2010	Germany			
43	Invited talk	Gang Huang	Internetware: a new software paradigm for Internet as a computer	Dec. 2011	Beijing, China	Scientific community		International
44	Invited lecture at Quovadis 2010	Marta Kwiatkowska	Challenges in quantitative verification for adaptive systems	May 2010	Cape Town, South Africa	Scientific community	50	International
45	Keynote at ICSOFT 2011	Antonia Bertinoro	Towards Ensuring Eternal CONNECTability	10-21 July 2011	Seville, Spain	Scientific community		International
46	CONNECT poster at FET'2009	Valérie Issarny		April 21-22 2009	Prague	Scientific community		International
47	Co-chair of CONNECT session at ICECCS'2009 and presentation of CONNECT	Valérie Issarny		June 2-4 2009	Postdam, Germany	Scientific community		International

**LIST OF APPLICATIONS FOR PATENTS, TRADEMARKS, REGISTERED DESIGNS, ETC.**

Type of IP Rights <sup>1</sup> :	Confidential Click on YES/NO	Foreseen embargo date dd/mm/yyyy	Application reference(s) (e.g. EP123456)	Subject or title of application	Applicant (s) (as on the application)

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<sup>1</sup> A drop down list allows choosing the type of IP rights: Patents, Trademarks, Registered designs, Utility models, Others.

Type of Exploitable Foreground <sup>2</sup>	Description of exploitable foreground	Confidential (Y/N)	Foreseen embargo date dd/mm/yy	Exploitable product(s) or measure(s)	Sector(s) of application <sup>3</sup>	Timetable, commercial or any other use	Patents or other IPR exploitation (licences)	Owner & Other Beneficiary(s) involved
General advancement of knowledge	Starlink: software framework for protocol specification & execution	No	None	Starlink: Can be exploited by other research projects	M71.1.2 Engineering activities and related technical consultancy M72 Scientific research and development	Available for academic/research purposes. No commercial usage is foreseen.	LGPLv3	Owner: LANCS CONNECT partners Open source
General advancement of knowledge	PRISM, version 4.0.3: a probabilistic model checker implemented part of assume-guarantee reasoning methods	No	None	PRISM version 4.0.3 - it can be exploited in other research projects	M71.1.2 Engineering activities and related technical consultancy M72 Scientific research and development	Available for academic/research purposes. No commercial usage is foreseen.	GNU General Public Licence (GPL)	Owner: UOXF CONNECT partners Open source

<sup>19</sup> A drop down list allows choosing the type of foreground: General advancement of knowledge, Commercial exploitation of R&D results, Exploitation of R&D results via standards, exploitation of results through EU policies, exploitation of results through (social) innovation.

<sup>3</sup> A drop down list allows choosing the type sector (NACE nomenclature) : [http://ec.europa.eu/competition/mergers/cases/index/nace\\_all.html](http://ec.europa.eu/competition/mergers/cases/index/nace_all.html)



Type of Exploitable Foreground <sup>2</sup>	Description of exploitable foreground	Confidential (Y/N)	Foreseen embargo date dd/mm/yy	Exploitable product(s) or measure(s)	Sector(s) of application <sup>3</sup>	Timetable, commercial or any other use	Patents or other IPR exploitation (licences)	Owner & Other Beneficiary(s) involved
General advancement of knowledge	PRISM Connect bundle: a probabilistic model checker with implementation of the assume-guarantee reasoning methods that can be used for offline compositional reasoning about component-based systems, and SCC-based quantitative verification to speed up runtime verification of non-functional properties	No	None	PRISM CONNECT bundle - it can be exploited in other research projects	M71.1.2 Engineering activities and related technical consultancy M72 Scientific research and development	Available for academic/research purposes. No commercial usage is foreseen.	GNU General Public Licence (GPL)	Owner: UOXF CONNECT partners Open source
General advancement of knowledge	MICS: Mediator synthesis to connect components	No	None	MICS: Can be exploited by other research projects	M71.1.2 Engineering activities and related technical consultancy M72 Scientific research and development	Available for academic/research purposes. No commercial usage is foreseen.	GNU General Public Licence (GPL)	Owner: Inria CONNECT partners Open source

Type of Exploitable Foreground <sup>2</sup>	Description of exploitable foreground	Confidential (Y/N)	Foreseen embargo date dd/mm/yy	Exploitable product(s) or measure(s)	Sector(s) of application <sup>3</sup>	Timetable, commercial or any other use	Patents or other IPR exploitation (licences)	Owner & Other Beneficiary(s) involved
General advancement of knowledge	FCCL: Framework for Composite Cross-layer Protocol Interoperability	No	None	FCCL: Can be exploited by other research projects	M71.1.2 M72 (see top)	Available for academic/research purposes. No commercial usage is foreseen	LGPLv3	Owner: Ambientic CONNECT partners Open source
Infrastructure for active automata learning	A flexible and reusable framework for learning algorithms and related infrastructure	NO	NONE	LearnLib: Can be exploited by other research projects	Automated Verification, Testing, Quality Assurance	Not present	LGPL3	Owner: TUDo CONNECT partners Academic/research organizations interested in automata learning
Monitoring of services and things	Monitoring of heterogeneous devices with model driven functional and non functional property specification. Automatic refinement of monitoring rules at runtime using metarules and complex event processing	No	None	Glimpse Monitoring Infrastructure: Can be exploited by other research projects	Automotive Domotics Choreographies of services Mobile devices	Not present	GPL3	Owner: CNR CONNECT partners Academic/research organizations interested in dependability and performance analysis

Type of Exploitable Foreground <sup>2</sup>	Description of exploitable foreground	Confidential (Y/N)	Foreseen embargo date dd/mm/yy	Exploitable product(s) or measure(s)	Sector(s) of application <sup>3</sup>	Timetable, commercial or any other use	Patents or other IPR exploitation (licences)	Owner & Other Beneficiary(s) involved
General advancement of knowledge	<p>CPMM is a new meta-model for specifying non-functional properties, metrics and events.</p> <p>CPMM provides automated support along the software life-cycle phases, in the ModelDriven Development (MDD) process.</p>	No	None	<p>CPMM Editor</p> <p>Automated support for Model2Code transformation</p>	<p>M71.1.2 Engineering activities and related technical consultancy</p> <p>M71.2 - Technical testing and analysis</p> <p>M72 Scientific research and development</p>	Available for academic/research purposes. No commercial usage is foreseen.	Eclipse Public License (EPL)	<p>Owner: CNR</p> <p>CONNECT partners</p> <p>Software developer</p> <p>Software engineer</p>
General advancement of knowledge	Automated model-based stochastic dependability and performance analysis technique and tool, able to adapt to changes evolution of model parameters	No	None	DePer tool (prototype level)	<p>M71.1.2 Engineering activities and related technical consultancy</p> <p>M72 Scientific research and development</p>	Available for academic/research purposes. No commercial usage is foreseen.	<p>DePer is released under GPL v3 license.</p> <p>DePer requires two extra tools: Mobius and Genet, for which licences need to be obtained</p>	<p>Owner: CNR</p> <p>CONNECT partners</p> <p>Academic/research organizations interested in dependability and performance analysis</p>

Type of Exploitable Foreground <sup>2</sup>	Description of exploitable foreground	Confidential (Y/N)	Foreseen embargo date dd/mm/yy	Exploitable product(s) or measure(s)	Sector(s) of application <sup>3</sup>	Timetable, commercial or any other use	Patents or other IPR exploitation (licences)	Owner & Other Beneficiary(s) involved
General advancement of knowledge	Security Enabler: it is a Web service that provides the method to instrument a connector with a given policy	Yes	None	The Security Enabler Web service – it can be exploited in other research projects	M71.1.2 Engineering activities and related technical consultancy N80 - Security and investigation activities N80.2.0 - Security systems service activities	Available for academic/research purposes. No commercial usage is foreseen.	Proprietary	Owner: CNR  CONNECT partners

In addition to the table, here is a text to explain the exploitable foreground, in particular:

- *Its purpose*
- *How the foreground might be exploited, when and by whom*
- *IPR exploitable measures taken or intended*
- *Further research necessary, if any*
- *Potential/expected impact (quantify where possible)*

**Starlink:**

- *Its purpose*  
Starlink is a middleware platform, supporting the concept of emergent middleware, and utilising domain specific languages (DSLs) to specify interoperability solutions between both middleware and application protocols which can then be interpreted or executed at runtime. The goal is to have a more flexible and dynamic solution to interoperability that avoids reliance on any given interfaces or standards.
- *How the foreground might be exploited, when and by whom*  
The solution is available to research groups and indeed commercial interests in the middleware community for experimentation and extension, building on a similar model as used, for example, for Open COM, also developed at Lancaster.
- *IPR exploitable measures taken or intended*  
None - we are pursuing an open source approach to dissemination and have no plans to claim IPR on this software or its underlying techniques.
- *Further research necessary*  
Further research is required to understand how to use Starlink across multiple layers of software in a coordinated way, and also to optimise performance of DSL-based solutions. We also see many other domains of application for the software and intend to pursue its use in cloud computing, providing platform and vendor independence in managing federated cloud infrastructure.

- *Potential/expected impact*  
We seek: academic impact on the field of interoperability and middleware as measured by citations on the collective set of papers (target of at least 200 citations across the papers on Starlink), and also on downloads (target at least 500 downloads of the software, and also in the longer term, impact on products and services by seeing the uptake of the concept of emergent middleware and the underlying conceptual principles (models at runtime, DSL-based solutions, dynamic generation of connectors, etc).

#### **PRISM and PRISM CONNECT bundle:**

- *Its purpose*  
PRISM is a probabilistic model checker under development at the Universities of Oxford and Birmingham since 2001. It supports the modelling of several types of probabilistic systems and their offline verification against probabilistic temporal logic specifications, as well as approximate model checking and discrete event simulation. PRISM 4.0 and 4.1 releases include new software developed by CONNECT.  
PRISM CONNECT bundle was implemented on top of PRISM. It provides a multi-objective model checking framework, which is the underlying technique used by the assume-guarantee reasoning methods developed for Work Package 2. It also implements incremental quantitative verification techniques developed for Work Package 5.  
In the future, PRISM CONNECT bundle will be integrated into PRISM to provide a uniform platform for modelling and analysis.
- *How the foreground might be exploited, when and by whom*  
PRISM is open source and its use is free for academic purposes. The tool is widely used world-wide for research and teaching, for example at Saarland University and University of Colorado. There are approx. 300-400 downloads per month and citations to tool papers are well over 1,000, including 138 citations to the CAV 2011 PRISM 4.0 tool paper (Google Scholar). Of the 217 external publications, several recent ones have applied PRISM to case studies in e.g. sensor networks, model-based safety and dependability analysis, service composition, QoS analysis, and security protocols.
- *IPR exploitable measures taken or intended*  
Currently PRISM and PRISM CONNECT bundle are released under GPL licence. Future releases of PRISM will include LGPL (GNU Lesser General Public License) and FreeBSD License due to external libraries that have to be included for new functionalities in the future releases.
- *Further research necessary, if any*  
PRISM is an ongoing project supported by a range of funding sources, not just CONNECT, and also includes, for example, PRISM-games, an extension that supports stochastic game models that was funded separately from CONNECT. We will continue developing and implementing new verification techniques in PRISM. For example, online model repair techniques using global optimisation methods, reported in D5.4, will be strengthened and integrated into future releases of PRISM.
- *Potential/expected impact (quantify where possible)"*  
As the leading probabilistic model checker, PRISM will continue to be adapted in research and teaching internationally. In addition to several keynotes and summer schools at which probabilistic model checking with PRISM was taught during the lifetime of CONNECT, three more keynotes and three graduate summer school courses are planned for 2013.

#### **MICS:**

- *Its purpose*  
The MICS tool supports mapping-driven abstract mediator synthesis. It specifically combines ontology reasoning and constraint

programming to identify the semantic correspondence between the actions of networked systems' interfaces, i.e., interface mapping. MICS composes these mappings so as to generate a mediator that performs the necessary translations and coordination in order to enable the networked systems to interoperate.

- *How the foreground might be exploited, when and by whom*  
The solution is available to research groups and possible commercial interests in the software engineering community for experimentation and extension.
- *IPR exploitable measures taken or intended*  
None - we are pursuing an open source approach to dissemination and have no plans to claim IPR on this software or its underlying techniques.
- *Further research necessary*  
Further research is required to support self-adaptive mediator synthesis as well as to allow for combined use with alternative approaches to mediator synthesis, according to the specific application domain. The tool further still needs to integrate support for goal-based mediator synthesis according to the design elaborated in the final period of the project.
- *Potential/expected impact*  
We seek: academic impact in the field of mediator synthesis as measured by citations and also on downloads.

#### **FCCL:**

- *Its purpose*  
The FCCL tool facilitates cross-layer interoperability by automatically generating parsers and composers that abstract physical message encapsulation layers into logical protocol layers, thus supporting application layer mediation. The essential functionalities of the FCCL framework are to enable the reuse of existing parser and composer implementations and to easily integrate with standard IDLs (e.g., Google Protocol Buffers) and MDLs (e.g., Starlink MDL). An SAXSD schema is also synthesized for each parser and composer generated by the framework in order to enable abstract protocol mediation..
- *How the foreground might be exploited, when and by whom*  
The solution is exploited by Ambientic for dealing with interoperability with cloud-based services. The solution is further available to research groups for experimentation and extension.
- *IPR exploitable measures taken or intended*  
None - we are pursuing an open source approach to dissemination and have no plans to claim IPR on this software or its underlying techniques.
- *Further research necessary*  
Further research is necessary to enhance performance of mediation at runtime.
- *Potential/expected impact*  
We seek: impact on the agile development process of mobile collaborative applications, as well as academic impact in terms of publications and related citations and software download.

#### **LearnLib :**

- *Its purpose*  
LearnLib is a platform-independent library for active automata learning. It provides a modular framework for the use of active learning algorithms and

supports developers in writing their own algorithms and test drivers. Furthermore, it provides advanced active learning algorithms and basic test drivers for common use cases. LearnLib comes with a rich variety of optimization filters, a key to the application of automata learning in practically relevant scenarios, allowing users to tailor learning setups to specific domains. With LearnLib studio, a graphical user interface exists that assists the user in this process, requiring little or none programming skills to actually employ active automata learning.

- *How the foreground might be exploited, when and by whom*  
LearnLib is used by various automata learning research groups, for example at the Radboud University, Nijmegen or the Laboratoire d'Informatique de Grenoble. There is currently ongoing work on integrating LearnLib with the Java PathFinder verification toolkit developed at NASA.
- *IPR exploitable measures taken or intended*  
LearnLib is available free of charge for academic and non-commercial uses. An open source release of the framework and core algorithms under the LGPL v3 is targeted for early 2013.
- *Further research necessary*  
We plan to further enhance LearnLib by developing and implementing active learning algorithms for even richer automaton models (i.e., register automata with binary relations, as described in D4.3). Additionally, we are investigating the combination of active and passive learning, and plan to integrate passive learning algorithms with LearnLib.
- *Potential/expected impact*  
LearnLib is already used by various academic groups worldwide, and it is one of the most important libraries for active automata learning (and the only one to actively target the practical application of automata learning and to include learning algorithms for models beyond DFAs/Mealy machines), of which we believe that it drastically lowers the hurdles of using active automata learning in practice. We expect to further increase the community by the planned open-source release and the integration with the widely-used Java PathFinder tool.

#### **Glimpse:**

- *Its purpose*  
Glimpse provides a lightweight event-driven monitoring infrastructure, which can be used for monitoring the occurrence of both functional and non-functional properties during execution of dynamic distributed systems.
- *How the foreground might be exploited, when and by whom*  
The monitor is released in a mature and complete version, that can be freely used by the community. It can be exploited for management and analysis purposes by software engineers and service providers.
- *IPR exploitable measures taken or intended*  
Glimpse is released under GPL3 license
- *Further research necessary*  
The current version is already mature for usage. Further research is ongoing for making it more proactive, by enhancing mostly the configuration rules. Also, the same configuration could be made adaptive and dynamic. Moreover, the monitor is also undergoing enhancement for integrated business-level monitoring of events with monitoring of resources at low layers, in the context of the ongoing FP7 project Choreos.

- *Potential/expected impact*  
The tool has potential for broader uptake beyond CONNECT. We are already pursuing its usage in other projects. Of high appeal is its component CPMM model converter that makes it Model-driven.

#### **CPMM:**

- *Its purpose*  
CPMM is a generic meta-model for defining non-functional properties spanning over dependability, performance and security. CPMM allows for specifying metrics and provides a complex events specification language that takes into account and enhances the composition operators of existing events specification languages.
- *How the foreground might be exploited, when and by whom*  
CPMM and the associated editor can be exploited to create new model instances of the Property, Metrics, MetricsTemplate, EventType and EventSet meta-models.  
  
CPMM might be exploited to provide an automated support for handling (defining and analysing) non-functional properties all along the Model Driven Engineering (MDE) process, including synthesis, testing and requirements analysis. Within CONNECT, CPMM provides an automated support for configuring the monitor system about what events to collect and how to infer whether or not a desired property is fulfilled.  
As two examples of different applications, CPMM might be used for driving analysis and monitoring of choreographies; or, CPMM prescriptive and descriptive properties might be used for driving the test case generation during the testing process.
- *IPR exploitable measures taken or intended*  
The CPMM meta-model and the associated editor have been released under Eclipse Public License (EPL).
- *Further research necessary, if any*  
Further research will be necessary to enhance CPMM to also deal with the definition of state-based properties and the specification of complex actions.
- *Potential/expected impact*  
CPMM contributes to the plethora of languages addressing specification of non-functional properties. It provides a comprehensive and general meta-model abstracting from the details of the target modeling languages and tools. It is the only proposal that allows for expressing properties, metrics and events.

#### **DePer**

- *Its purpose*  
The DEPER Enabler is in charge to assist the whole CONNECT environment towards the synthesis and deployment of a Connector suitable to satisfy non-functional requirements, namely dependability and performance related properties. Its activity is carried out both at pre-deployment (where the synthesized CONNECTor is analysed and possibly enhanced to meet the stated non-functional requirement before it is put in operation) and at run-time (to refine and adapt the analysis, to cope with uncertainties and inaccurate knowledge available at pre-deployment time, as well as evolution undertaken by the networked systems and the environment).
- *How the foreground might be exploited, when and by whom*  
Through the activity performed on analysis of dependability and performance properties in dynamic and evolving connected systems, new expertise has been acquired by the group on modeling and assessment of dependable systems, to be fruitfully exploited in future research projects and



technology transfers. The tool prototype is released under a public license and could be of interest for academic research groups working in CONNECT-related contexts. Also, it is planned to include case studies from the CONNECT framework in teaching material at graduate courses in software engineering and dependable computing CNR researchers are involved in.

- *IPR exploitable measures taken or intended*  
DePer is released under GPL v3 license. It requires two extra tools: Mobius and Genet, for which licences need to be obtained
- *Further research necessary*  
Currently, Deper is implemented at prototype level, where a few functionalities are still missing or implemented as a preliminary version. In order to increase possibilities to exploit it, we first plan the consolidation of the development of the Deper prototype as an automatic tool for performance and dependability analysis of networked systems, which integrates run-time gathering of data from real executions to provide adaptation and refinement of the analysis itself. However, the extent of further developments is strictly related to the procurement of new (funded) research initiatives that will motivate significant refinements of the work on Deper.
- *Potential/expected impact*  
This tool has the potential to become a powerful means for pre-deployment and run-time analysis in Connect-related contexts and we plan to exploit it in such future studies, possibly taking advantage of new project opportunities at International and National level.

### **Security enabler**

- *Its purpose*  
The Security Enabler is in charge for guaranteeing that security requirements are satisfied during the communication among networked systems through the CONNECTor. In particular the Security Enabler that is released as a web service, works at two different levels: It is in charge of checking for allowed messages at run-time, i.e., when the communication is established, and of instrumenting the code during the synthesis procedure. These two actions are the basis for assuring security aspects at run-time.
- *How the foreground might be exploited, when and by whom*  
The aim of the activity on security we have carried on in CONNECT is provide a methodology for assuring security properties in dynamic and evolving systems. The proposed approach takes into account the possible threats that may occur in the CONNECT scenario due to the relations among the involved components of the communication. We have fostered usage of this approach in other research projects. In particular, it is used in the FP7 project Aniketosis for synthesizing a secure orchestrator able to coordinate different and distributed services in such a way that user security requirements is satisfied. Also a tool is provided. It consists of two parts: a web-service which provides the method to instrument a connector with a given policy, and which handles global variables at run-time, and a SecurityLib, which is included with the connector, and provides the method checking whether a message is allowed or not.
- *IPR exploitable measures taken or intended*  
The prototype is free of using for the consortium, but remains proprietary
- *Further research necessary, if any*  
Currently, the Security Enabler is implemented at prototype level. As run-time it can be extended with other functionalities by considering different enforcement strategies according to the security policy required. In particular, we plan to extend it for dealing with web service not only considering orchestrator as a central point but also as a possible distributed entity that runs on different location of a distributed system.

- *Potential/expected impact*

This tool is flexible and dynamic in order to dealing with security requirements that may evolve according to the dynamicity of the system. We plan to exploit it in such future studies, possibly taking advantage of new project opportunities at International and National level.

### **AmbiStream**

- *Its purpose*

Based on the Starlink middleware and CONNECTor architecture, AmbiStream uses domain specific languages (DSLs) to achieve interoperability between live streaming protocols on mobile devices. AmbiStream extends the CONNECTor architecture and introduces a DSL for specifying Multimedia Container formats which enable the synthesis of real-time multimedia processing pipelines capable of fragmenting, packaging and multiplexing Elementary Stream (the raw bitstream output of an audio or video encoder) data.

- *How the foreground might be exploited, when and by whom*

The solution is exploited by Ambientic for dealing with interoperability between streaming protocols on mobile platforms.

- *IPR exploitable measures taken or intended*

The prototype is available for the consortium, but remains proprietary.

- *Further research necessary, if any*

Further research is necessary to increase automation and reduce the complexity of the DSL models. A secondary objective is enabling interoperability between protocols that present concurrent behaviors on parallel communication channels, notably between the Control Protocol and Multimedia Transport Protocol layers.

- *Potential/expected impact*

We seek impact on the agile development process of mobile collaborative applications, as well as academic impact in terms of publications and related citations.