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@inproceedings { BBK11,
  author = { Biallas, Sebastian and Brauer, J{"o}rg and Kowalewski,
Stefan },
  title = { SAT-Based Abstraction Refinement for Programmable Logic
Controllers },
  booktitle = { Dependable Control of Discrete Systems (DCDS'11) },
  illkey = {conference},
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and Kowalewski, Stefan},
  title = {Analyzing Embedded Systems Code for Mixed-Critical Systems using
Hybrid Memory Representations},
  booktitle = {2011 14th IEEE International Symposium on
Object/Component/Service-Oriented Real-Time Distributed Computing Workshops
ISORCW 2011},
  pages = {33 - 40},
  publisher = {IEEE},
  isbn = {978-1-4577-0303-4 },
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  author = {Brauer, J{"o}rg and Hansen, Rene Rydhof and Kowalewski, Stefan
and Larsen, Kim G. and Olesen, Mads Chr.},
  title = {Adaptable Value-Set Analysis for Low-Level Code},
  booktitle = {6th International Workshop on Systems Software Verification
(SSV 2011)},
  year = {2011},
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series = {Lecture Notes in Computer Science},
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volume = {6602},
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  booktitle = {Computer Aided Verification (CAV 2011)},
  pages = {191-207},
  volume = {6806},
  series = {Lecture Notes in Computer Science},
  editor = {Gopalakrishnan, Ganesh and Qadeer, Shaz},
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    Address = {D{\u}seldorf},
    Author = {Biallas, Sebastian and Kowalewski, Stefan and Schlich,
Bastian},
    Title = {Leistungsf{\a}hige Verifikation von industriellen SPS-
Programmen mittels Model-Checking und statischer Analyse},
    Booktitle = {AUTOMATION 2011, Baden-Baden, Germany},
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@PROCEEDINGS{BRT11,
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@INPROCEEDINGS{BWS+11,
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Andr{\e} and Arens, Jutta and
    Walter, Marian},
    title = {Patient Orientated Automation of the Therapy with the
Extracorporeal Membrane Oxygenation (ECMO)},
    booktitle = {45. Jahrestagung der Deutschen Gesellschaft f{\u}r
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  booktitle = { International Micro Air Vehicle Conference 2011 (IMAV
2011) },
  year = { 2011 },
  location = { 't Harde, Netherlands },
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Elektrofahrzeuge auf Basis von OpenStreetMap-Daten },
  booktitle = { Konferenz f{"u}r Freie und Open Source Software f{"u}r
Geoinformationssysteme (FOSSGIS 2011) },
  year = { 2011 },
  pages = { 92 -- 99 },
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Elektrofahrzeuge },
  booktitle = { Angewandte Geoinformatik 2011 - Beitr{"a"}ge zum 23. AGIT-
Symposium (AGIT 2011)},
  year = { 2011 },
  pages = { 148 -- 157 },
  location = { Salzburg, Austria },
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publisher = { Wichmann Verlag },
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@inproceedings { FEWK11,
  author = { Franke, Dominik and Elsemann, Corinna and Weise, Carsten and
Kowalewski, Stefan },
  title = { Reverse Engineering of Mobile Application Lifecycles },
  booktitle = { 18th Working Conference on Reverse Engineering },
  year = { 2011 },
  location = { Lero, Limerick, Ireland },
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@inproceedings {FWK11,
  author = { Franke, Dominik and Weise, Carsten},
  title = { Providing a Software Quality Framework for Testing of Mobile
Applications },
  booktitle = { 4th International Conference on Software Testing
Verification and Validation (ICST 2011), Berlin, Germany },
  year = { 2011 },
  pages = {431 - 434 },
  isbn = {978-1-61284-174-8},
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@INPROCEEDINGS{GK11,
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Units},  
  booktitle = { 18th World Congress of the International Federation of  
Automatic Control (IFAC)},  
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@INPROCEEDINGS{HSK11,  
author = {H{"a}nsch, Paul and Schommer, John F. and Kowalewski, Stefan},  
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for Bachelor Students},  
booktitle = {Proceedings of the 4th International Conference on Intelligent  
Robotics and Applications (ICIRA 2011), Aachen, Germany},  
year = {2011},  
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  title = { Coping with Complexity of Testing Models for Real-Time  
Embedded Systems },  
  booktitle = { 3rd Workshop on Model-Based Verification and Validation  
(MVV 2011) },  
  year = { 2011 },  
  pages = { 128 -- 135 },  
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@CONFERENCE{KS11,
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author = {Kowalewski, Stefan and Stollenwerk, Andr{'e}},
title = {Supporting Evolving Requirements in CPS by Abstraction Layers in
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booktitle = {Workshop on Architectures for Cyber-Physical Systems,
Chicago, IL, USA},
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author = { Mitsching, Ralf and Weise, Carsten and Bohnenkamp, Henrik and
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title = { TripleT: Improving Test Responsiveness for High Performance
Embedded Systems},
booktitle = { 4th IEEE International Conference on Software Testing,
Verification, and Validation },
pages = {67 -- 74},
year = { 2011 },
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author = { Ben Makhlouf, Ibtissem and Maschuw, Jan Philipp and H{"a}nsch,
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title = {Safety Verification of a Cooperative Vehicle Platoon with
Uncertain Inputs Using Zonotopes},
booktitle = {18th IFAC World Congress, 2011, Milano, Italy},
year = {2011},
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@inproceedings {MPBK11,
author = { Merschen, Daniel and Polzer, Andreas and Botterweck, Goetz
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title = { Experiences of Applying Model-based Analysis to Support the
Development of Automotive Software Product Lines },
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booktitle = { Fifth International Workshop on Variability Modelling of
Software-intensive Systems (VAMOS 2011) },
year = { 2011 },
editor = { Czarnecki, Krzysztof and Eisenecker, Ulrich W. and Heymans,
Patrick },
pages = { 141 -- 150 },
month = { January },
publisher = { ACM },
isbn = { 978-1-4503-0570-9 },
location = { Namur, Belgium },
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http://www.embedded.rwth-aachen.de/lib/exe/fetch.php?media=bib:MPBK11.pdf },
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title = {Managing Complexity and Variability of a Model-based Embedded
Software Product Line},
journal = {Innovations in Systems and Software Engineering (ISSE)},
year = {2011},
publisher = {Springer},
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author = {Jacob Palczynski and Carsten Weise and Sebastian Moj and Stefan
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title = {Comparing Continuous Behaviour in Model-based Development of
Embedded Software},
booktitle = {Dagstuhl-Workshop MBEES: Modellbasierte Entwicklung
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year = {2011},
pages = {61 -- 70},
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Conformance Check},
  booktitle = {Fourth International Conference on Software Testing,
Verification and Validation Workshops (ICSTW, TAIC PART) 2011},
  pages = {590 -- 595},
  publisher = {IEEE Computer Society},
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  booktitle = {International Conference on Embedded Software (EMSOF 2011)},
  year = {2011},
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@INPROCEEDINGS{RGHK11,
  author = {Reinbacher, Thomas and G{"u}ckel, Dominique and Horauer, Martin
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  booktitle = {Proceedings of the Workshop on SLE for CPS at INFORMATIK 2011
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Code},
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  title = {Hardware Support for Efficient Testing of Embedded Software},
  booktitle = {7th ASME/IEEE Conference on Mechatronics and Embedded Systems
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  title = {Safety Aware Pump-Control for a Rotary ECMO Blood Pump},
  booktitle = {38. Congress of the European Society for Artificial Organs
(ESAO
  2011) and 4. Biennial Congress of the International Federation on
Artificial Organs (IFAO 2011) - (The International Journal of Artificial
Organs)},
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organization = {European Society for Artificial Organs (ESAO)},
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  title = {A Model-Based Safety Concept for a Rotary Blood Pump},
  booktitle = {45. Jahrestagung der Deutschen Gesellschaft f{\"u}r
Biomedizinische
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Marian and
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    Stefan},
  title = {Smart Data Provisioning for Model-Based Generated Code in an
Intensive
    Care Application},
  booktitle = {High Confidence Medical Devices, Software, and Systems and
Medical
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Steffen},  
  title = {Physiological Target Control in Long Term Extracorporeal  
Oxygenation},  
  booktitle = { 38. Congress of the European Society for Artificial Organs  
(ESA0  
2011) and 4. Biennial Congress of the International Federation on  
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Steffen},  
  title = {Closed Loop Physiological ECMO Control},  
  booktitle = {5th European Conference of the International Federation for  
Medical and Biological Engineering},  
  year = {2011},  
  language = {eng},  
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R{"u}dger and Walter, Marian and Stollenwerk, Andre and Schmitz-Rode,  
Thomas and Steinseifer, Ulrich},  
title= {A Dynamic Study on the Hemolytic Effect of Negative Pressure on  
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journal= {ASAI0 journal},
volume= {56},
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@inproceedings{BBK10,
  author = {Biallas, Sebastian and Brauer, J\"org and Kowalewski, Stefan},
  title = {Counterexample-guided abstraction refinement for {PLCs}},
  booktitle = {5th International Workshop on Systems Software Verification
(SSV 2010), Vancouver, Canada},
  year = {2010},
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@article{BBGK10,
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author = {Biallas, Sebastian and Brauer, J{"o}rg and G{"u}ckel, Dominique  
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title = {On-The-Fly Path Reduction},  
journal = {Electronic Notes in Theoretical Computer Science},  
year = {2011},  
volume = {274C},  
pages = {3--16},  
publisher = {Elsevier},  
note = {4th International Workshop on Harnessing Theories for Tool Support  
in Software (TTSS 2010)},  
issn = {1571-0661},  
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Written in {IL}},  
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  author = {Biallas, Sebastian and Frey, Georg and Kowalewski, Stefan and  
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  title = {Formale Verifikation von Sicherheits-Funktionsbausteinen der  
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auf Modell- und Code-Ebene},  
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  title = {Variability and Evolution in Model-based Engineering of
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  year = {2010},
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  pages = {87-96},
  address = {Dagstuhl, Germany},
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  author = {Goetz Botterweck and Andreas Polzer and Stefan Kowalewski},
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@INPROCEEDINGS{BPD+10,
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  title = {EvoFM: Feature-driven Planning of Product-line Evolution},
  booktitle = {Proceedings of the 2010 ICSE Workshop on Product Line
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in Software Engineering (PLEASE '10)},
  year = {2010},
  isbn = {978-1-60558-968-8},
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@INPROCEEDINGS{BK10,
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  booktitle = {Static Analysis Symposium (SAS 2010), Perpignan, France},
  publisher = {Springer},
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Congruences},
  booktitle = {Formal Methods for Industrial Critical Systems (FMICS 2010),
Antwerp, Belgium},
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  series = {Lecture Notes in Computer Science},
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@INPROCEEDINGS{BKKN10,
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Noll, Thomas},
  title = {Loop Refinement using Octagons and Satisfiability},
  booktitle = {Proceedings of the 5th international conference on Systems
software verification},
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Dirk},
title = {Regelung und Sicherheitsanalyse einer Gruppe Massenkraftfahrzeuge
mit Hilfe energiebasierter Methoden},
journal = {at - Automatisierungstechnik},
year = {2010},
volume = {58},
pages = {227-235},
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title = {On the Effects of Network Delays on an Energy-based Controller},
booktitle = {2nd IFAC Workshop on Distributed Estimation and Control in
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title = {A Testing Platform for Cooperative Vehicle Platoon Controllers},
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    booktitle = { Gesellschaft f{"u}r Informatik Seminars, Informatiktage
2010 },
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    Title = {A System for Synthesizing Abstraction-Enabled Simulators for
Binary Code Verification},
    Year = {2010},
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Code},
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    year = {2010},
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@PROCEEDINGS{KR10,
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Requirements
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  booktitle = {10th IEEE International Conference on Computer and
Information Technology (CIT 2010)},
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@inproceedings{MWK10,
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Integration and Reliability},
  year = {2010},
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@INPROCEEDINGS{PMT+10,
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  title = {View-Supported Rollout and Evolution of Model-Based ECU
Applications},
  booktitle = {7th International Workshop on Model-based Methodologies for
Pervasive
    and Embedded Software (MOMPES 2010) collocated within the 25th IEEE/ACM
    International Conference on Automated Software Engineering},
  year = { 2010 },
  editor = {Goetz Botterweck and Jo\~{a}o M. Fernandes and Lu\{'\i}s Lamb},
  pages = { 37-44 },
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  title = {Testing Continuous Systems Conformance Using Cross Correlation},
  booktitle = {Proceedings of the 22nd IFIP International Conference on
Testing Software and Systems: Short Papers},
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@INPROCEEDINGS{RBH+10,
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  title = {Test-Case Generation for Embedded Binary Code Using Abstract
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  booktitle = {Sixth Doctoral Workshop on Mathematical and Engineering
Methods in Computer Science (MEMICS 2010), Selected Papers, Mikulov, Czech
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  title = {Model Checking Embedded Software of an Industrial Knitting
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  journal = {Int. J. Information Technology, Communication and Convergence},
  year = {2010},
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@article{Sch10,
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  booktitle = {Workshop on Embedded Systems Education (WESE10),
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  title = {Model Based Diagnosis for Extracorporeal Membrane Oxygenation},
  journal = {The International Journal of Artificial Organs},
  year = { 2010 },
  volume = {33},
  pages = {447},
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  month = { September },
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  title = { Modellbasierte Fehlerdiagnose eines Membranoxygenators },
  booktitle = { Biomedizinische Technik (BMT2010) },
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Marian and Arens, Jutta and Kopp, R{\u}dger and Kowalewski, Stefan },
  title = { Sicherheitskonzept f\u00fcr eine intensivmedizinische
Anwendung am Beispiel der ECMO },
  booktitle = { Entwurf komplexer Automatisierungssysteme (EKA 2010) },
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Membranoxygenierung},
journal = {at – Automatisierungstechnik},
year = {2010},
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  title = {A Physiological Model for Extracorporeal Oxygenation  
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Engineering in Medicine  
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  author = {Ashraf Armoush and Eva Beckschulze and Stefan Kowalewski},  
  title = {Safety Assessment of Design Patterns for Safety-Critical Embedded  
Systems},  
  booktitle = {35th Euromicro Conference on Software Engineering and  
Advanced Applications  
(SEAA 2009)},  
  year = {2009},  
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  booktitle = {International Workshop on the Design of  
Dependable Critical Systems "Hardware, Software, and Human Factors in  
Dependable System Design" (DDCS 2009)},  
  publisher = {Universit{"a}t Heidelberg},  
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{http://archiv.ub.uni-heidelberg.de/volltextserver/volltexte/2009/10072/pdf/
Safety_Recommendations_for_Safety_Critical_Design_Patterns.pdf},
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  year = {2009},
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  journal = {Electronic Notes in Theoretical Computer Science},
  volume = {254},
  pages = {65–83},
  year = {2009},
  note = {Proceedings of the 4th International Workshop on Systems Software
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Mechanism
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  booktitle = {2nd International Workshop on Model Based Architecting and
Construction
of Embedded Systems (ACESMB 2009), Workshop at the 12th International
Conference on Model Driven Engineering Languages and Systems (MoDELS
2009)},
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Huascar Espinoza},
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Model-driven Approaches
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  the 13th International Software Product Line Conference (SPLC 2009)},
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Christa Schwanninger
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  volume = {557},
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  author = {Botterweck, Goetz and Pleuss, Andreas and Polzer, Andreas and
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  booktitle = {First Workshop on Feature-Oriented Software Development
(FOSD), Workshop
  at the 12th International Conference on Model Driven Engineering
  Languages and Systems (MoDELS 2009)},
  year = {2009},
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@INPROCEEDINGS{BSK09a,
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  booktitle = {Safety-Critical Systems, 2009 (SAE World Congress 2009)},
  publisher = {SAE International},
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@article{BSK09b,
title = {Parallel and Distributed Invariant Checking of Microcontroller
Software},
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volume = {254},
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year = {2009},
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Verification (SSV 2009)},
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author = {Brauer, J{"o}rg and Schlich, Bastian and Kowalewski, Stefan},
url = {http://portal.acm.org/citation.cfm?id=1630177.1630457},
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author = {Beckschulze, Eva and Salewski, Falk and Kowalewski, Stefan},
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Electrical Systems},
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abstract = {Safety is a requirement concerning an increasing number of
automotive applications. Recent safety standards set requirements for
designing safety-critical systems. Among others, these specifications
include a comprehensive detection and handling of hardware faults. Currently
emerging dual-core microcontrollers provide a cost-effective opportunity to
fulfill these requirements. In this paper we analyze a safety-critical
application example and discuss two different approaches, an application-
specific approach and a generic approach for implementing functional safety
requirements on a dual-core microcontroller. An investigation of the
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associated concepts called and reveals their differences and at the same time advantages and disadvantages. Besides effects on safety, effects on reliability, modifiability and costs are evaluated and presented graphically.

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author = { Brauer, J{"o}rg and Schlich, Bastian and Reinbacher, Thomas and
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booktitle = { Workshop on Embedded Security (WESS 2009), Grenoble, France },
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@INPROCEEDINGS{BSSK09,
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Safety-Critical Automotive Applications},
  booktitle = {Leveraging Applications of Formal Methods, Verification and
Validation (ISoLA08)},
  year = {2009},
  volume = {17},
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@inproceedings{DSK09,
Author = {D{"u}lks, Ramona and Salewski, Falk and Kowalewski, Stefan},
Booktitle = {Testing: Academic and Industrial Conference - Practice and
Research Techniques (TAIC Part 2009)},
Title = {A Real-Time Test and Simulation Environment Based on Standard FPGA
Hardware},
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pages={197--204},
isbn = {978-0-7695-3820-4},
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@inproceedings{FHST09,
  Author = {Fehnker, Ansgar and Huuck, Ralf and Schlich, Bastian and Tapp, Michael},
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  Doi = {10.1007/978-3-540-95891-8_26},
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  Title = {Automatic Bug Detection in Microcontroller Software by Static Program Analysis},
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@INPROCEEDINGS{Guec09,
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  booktitle = {Doctoral Symposium on Systems Software Verification (DS SSV 2009)},
  issn = {0935-3232},
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Herberich, Gerlind and

Langerak, Rom and Piccoli, Benedetto and Polderman, Jan Willem and Weise, Carsten},

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@INBOOK{KLK09,

chapter = {IX},
pages = {341-349},
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How to Increase Patient Safety?},
publisher = {Springer Berlin Heidelberg},
year = {2009},
editor = {Vincent, Jean-Louis},
author = {Kopp, R{"u}dger and Leonhardt, Steffen and Kowalewski, Stefan},
volume = {1},
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@phdthesis{Klu09,

author = {Daniel Kl{"u}nder},
title = {Entwurf eingebetteter Software mit abstrakten Zustandsmaschinen und Business Object Notation},
institution = {RWTH Aachen University},
school = {Embedded Software Laboratory - RWTH Aachen University},
year = {2009},
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@PROCEEDINGS{KP09,

title = {Tools and Algorithms for the Construction and Analysis of Systems.
Proc. TACAS 2009},
year = {2009},
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Kowalewski,
    Stefan and Rossaint, Rolf},
  title = {Regelungs- und Sicherheitskonzepte für extrakorporale Systeme zur
Lungenunterstützung / Automatic control and safety concepts for
extracorporeal
    lung support},
  journal = {Biomedizinische Technik},
  year = {2009},
  volume = {54},
  pages = {289–297},
  number = {5},
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Regelungstechnik, acute respiratory distress syndrome, automation,
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membrane oxygenation, model-based safety concepts},
  url = {http://www.reference-global.com/doi/abs/10.1515/BMT.2009.036},
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@INPROCEEDINGS{LWW+09,
  author = {Leonhardt, Steffen and Walter, Marian and Wartzek, Tobias
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    Ali and Stollenwerk, Andr{'e} and Kopp, R{"u}dger},
  title = {Regelung des Gasaustauschs für die extrakorporale Oxygenierung},
  booktitle = {Automation 2009, Baden-Baden, Germany},
  year = {2009},
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  organization = {VDI},
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SSV'09) Real
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  year = {2009},
  pages = {23--25},
  publisher = {RWTH Aachen University},
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@INPROCEEDINGS{MKCA09,
  author = {Ben Makhoul, Ibtissem and Kowalewski, Stefan and Ch\{'a}vez
Grunewald, Martin Guillermo
and Abel, Dirk},
  title = {Safety Assessment of Networked Vehicle Platoon Controllers --
Practical
  Experiences With Available Tools},
  booktitle = {3rd IFAC Conference on Analysis and Design of Hybrid Systems,
Zaragoza, Spain 2009},
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@article{MWK+09,
author = {Mitsching, Ralf and Weise, Carsten and Kolbe, André and
Bohnenkamp,
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title = {Towards an Industrial Strength Process for Timed Testing},
journal = {IEEE International Conference on Software Testing, Verification,
and Validation },
volume = {0},
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eingebetteten  
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  year = {2009},  
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  author = {Jacob Palczynski and Stefan Kowalewski},  
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  booktitle = {UKSIM European Symposium on Computer Modeling and  
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  year = {2009},  
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Systems Engineering},  
  booktitle = {Model-based Methodologies for Pervasive and Embedded Software  
(MOMPES  
    2009), Workshop at the 31st International Conference on Software  
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Switzerland},
  Doi = {10.1109/SIES.2009.5196212 },
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  Title = {Refining Assembly Code Static Analysis for the Intel MCS-51
Microcontroller},
  Year = {2009},
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@inproceedings{RHS09,
  Author = {Reinbacher, Thomas and Horauer, Martin and Schlich, Bastian},
  Booktitle = {Design and Diagnostics of Electronic Circuits and Systems
(DDECS 2009), Liberec, Czech Republic},
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  Isbn = {978-1-4244-3341-4},
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  Title = {Using 3-Valued Memory Representation for State Space Reduction
in Embedded Assembly Code Model Checking},
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Brauer, J{"o}rg and Scheuer, Florian},
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  booktitle = {Embedded and Multimedia Computing (EM-Com 2009), Jeju,
Korea},
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@inproceedings{SBWK09,
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Italy},
    ISBN = { 978-3-902661-44-9 },
    Title = {Direct Model Checking of {PLC} Programs in {IL}},
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    author = {Schommer, John F. and Franke, Dominik and Kowalewski, Stefan and
Weise, Carsten},
    title = {Evaluation of the Real-Time Java Runtime Environment for
Deployment in Time-Critical Systems},
    booktitle = {7th International Workshop on Java Technologies for Real-Time
and Embedded Systems (JTRES '09), Madrid, Spain},
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Stefan},
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    booktitle = {Workshop on Embedded Systems Education (WESE09),
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    year = {2009},
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Transfer (STTT)},  
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  title = {Reduction of Interrupt Handler Executions for Model Checking
Embedded
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  booktitle = {Haifa Verification Conference (HVC 2009), Haifa, Israel},
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{http://www.embedded.rwth-aachen.de/lib/exe/fetch.php?media=bib:SNBB09.pdf},
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  author = {Stollenwerk, Andr{'e} and Walter, Marian and Wartzek,
Tobias and
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  title = {A Safety and Control Concept for Extracorporeal Membrane
Oxygenation},
  journal = {The International Journal of Artificial Organs},
  year = {2009},
  volume = {32},
  pages = {428},
  number = {7},
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(ESA009),
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  author = {Schmitz, Dominik and Zhang, M. and Rose, Thomas and Jarke,
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Systems

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Verfahren für die
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Membrane
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  booktitle = {World Congress on Medical Physics and Biomedical
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for Safety Critical Embedded Systems},  
booktitle = {11th International Conference on Information Technology (ICIT  
2008)},  
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    applicable verification tools. Recently, two new tools, PHAVer and
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    direction. We evaluate and compare both tools with the help of several
    benchmark examples. The results show that both have their strengths
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2006), Dresden, Germany},
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@INPROCEEDINGS{SWK05,
    author = {Salewski, Falk and Wilking, Dirk and Kowalewski, Stefan},
    title = {Diverse hardware platforms in embedded systems lab courses: A way
to teach the differences},
    booktitle = {Special Issue: The First Workshop on Embedded System
Education (WESE)},
    year = {2005},
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booktitle = {Workshop on Zuverl\ "assigkeit in eingebetteten Systemen - Ada  
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journal = {GI Softwaretechnik-Trends},  
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@inproceedings{SK05,  
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Author = {Schlich, Bastian and Kowalewski, Stefan},  
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Methods, Verification, and Validation (ISoLA 2005), Columbia, Maryland,  
USA},  
Month = {September},  
Note = {NASA/CP-2005-212788},  
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@INPROCEEDINGS{WK05,  
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year = {2005},  
editor = {Hubert Baumeister and Michele Marchesi and Mike Holcombe},  
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  Author = {Schlich, Bastian and Kowalewski, Stefan},
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  Number = {RWTH-I11-2004-1},
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  Year = {2004}}
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Last update: **2011/09/27 09:26**

