V. VYATKIN
LIST OF PUBLICATIONS, PRESENTATIONS and other RESEARCH OUTPUTS

BOOKS AUTHORED

BOOK EDITED

PEER REVIEWED JOURNAL PAPERS (34)


34. Vyatkin, V., Christensen, J., Lastra, J.L. ‘An Open, Object-Oriented Knowledge Economy for Intelligent Distributed Automation’, *IEEE Transactions on Industrial Informatics, 1, (1)*, ...

PEER REVIEWED BOOK CHAPTERS (22)

JOURNAL AND BOOK EDITORIALS

PATENTS
64. V. Vyatkin, G. Zhabelova, C.-W. Yang and N. Nair, “Improvements to the Control of Networks”, provisional patent, 2011

PEER REVIEWED CONFERENCE PAPERS PUBLISHED IN PROCEEDINGS (110)


72. В.Н.Дубинин, В.В.Вяткин, “Моделирование и верификация функциональных блоков IEC 61499 с использованием SMV”, ИРЭСНО, 2011, Пенза

73. V. Dubinin, V. Vyatkin, “Cycle detection in IEC 61499 function block systems using ontologies”, International conference CIT’11, Penza, December, 2011 (обнаружение циклов в системах функциональных блоков IEC 61499 с использованием онтологий), (CIT’11), Penza, December, 2011, accepted


78. V. Vyatkin, G. Zhabelova, M. Ulieru, D. McComas, “Toward Digital Ecologies: Intelligent Agent Networks Controlling Interdependent Infrastructures”, 1st IEEE Conference on SmartGrid Communications, Gaithersburg, MD, October 1-2, 2010


83. C. Pang, V. Vyatkin, “IEC 61499 Function Block Implementation of Intelligent Mechatronic Components”, 8th International IEEE Conference on Industrial Informatics, (INDIN’10), July 13-16, Osaka, Japan

84. C.-H. Yang, V. Vyatkin, “Model Transformation between MATLAB Simulink and Function Blocks”, 8th International IEEE Conference on Industrial Informatics, (INDIN’10), July 13-16, Osaka, Japan


88. W. Dai, V. Vyatkin, “A Case Study on Migration from IEC 61131 PLC to IEC 61499 Function Block Control”, 7th International IEEE Conference on Industrial Informatics, (INDIN’09), Cardiff, June 2009


92. V. Dubinin, V. Vyatkin, “Refactoring of Execution Control Charts in Basic Function Blocks of the IEC 61499 Standard”, 13th IFAC Symposium on Information and Control in Manufacturing (INCOM’09), Proceedings, Moscow, 2009


96. J. Yang, V. Vyatkin, Design and Validation of Distributed Control with Decentralized Intelligence in Process Industries: A Survey, 6th International IEEE Conference on Industrial Informatics, (INDIN’08), Daejeon, Korea, July 2008


98. V. Vyatkin, J. Chouinard, “On Comparisons the iSaGRAF implementation of IEC 61499 with FBDK and other implementations”, 6th IEEE International Conference on Industrial Informatics, (INDIN’08), Daejeon, Korea, July 2008


103. V. Vyatkin, V. Dubinin, Ferrarini, L.M., Veber C., Alternatives for Execution Semantics of IEC61499, 5th IEEE Conference on Industrial Informatics (INDIN ’07), Vienna, p.1151-1156


109. V. Vyatkin, V. Dubinin, Sequential Axiomatic Model for Execution of Basic Function Blocks in IEC61499, 5th IEEE Conference on Industrial Informatics INDIN 2007, Vienna, p.1183-1188


113. V. Vyatkin, H.-M. Hanisch, Design of Controllers aiming at Plug-and-Play Engineering of Automated Systems from Mechatronic Components, Annual Conference of Italian Automation Society (ANIPLA’06), Rome 2006


117. V. Dubinin, V. Vyatkin, Towards a Formal Semantics of IEC1499 Function Blocks, 4th IEEE Conference on Industrial Informatics (INDIN’06), Singapore, 2006


119. Vyatkin V., Modelling and execution of reactive function block systems with Condition/Event nets, 4th IEEE Conference on Industrial Informatics (INDIN ’06), Proceedings, Singapore, 2006


134. Vyatkin, V., Peniche, C. 'How does the IEC61499 architecture fit the requirements of intelligent automation systems?’, 2nd IEEE Conference on Industrial Informatics (INDIN04), Proceedings, Berlin, Germany, June, 2004


137. Vyatkin, V., Hanisch, H.M., Bouzon, G. 'Open Object-oriented validation framework for modular industrial automation systems', 11TH IFAC SYMPOSIUM ON INFORMATION CONTROL PROBLEMS (INCOM’2004), Carlos Pereira(ed.), Proceedings, Salvador, Brazil, April, 2004


156. Vyatkin, V., Hanisch, H.M., Starke, P., Roch, S. 'Formalisms for verification of discrete control applications on example of IEC1499 function blocks', "Verteilte Automatisierung" (Distributed Automation), *Proceedings, Magdeburg, Germany*, March, 2000


167. V. Vyatkin, G. Ivanov, V. Kondrashev I., Makarov R., Osheter V., Fedorenko V., "The concept of visual flow-chart programming and its realization in a CASE-tool GraphCycle “,


CONFERENCE PAPERS (lightly reviewed)


176. Vyatkin, V. 'Practical Modeling and Verification of Distributed Control Systems', 35th Regellungstechniches Kolloquium (German Control Technology Symposium), Boppard, Germany, February, 2001

177. Vyatkin, V. 'Verification of Distributed Controllers following IEC61499', Workshop des GMA-Fachausschusses 1.50 (German Association for Automation Workgroup Seminar), Halle(Saale), Germany, 23rd of March, 2001

178. Vyatkin, V. 'Verification Environment for Distributed Control Applications', 2nd Workshop of the DFG Verification Workgroup., Tübingen, 18th of April, 2001


TUTORIALS AT INTERNATIONAL CONFERENCES


PEER-REVIEWED THESESES

184. VYATKIN V., Efficient computational implementation of discrete controllers, Habilitation Thesis (for the degree of Doctor of Sciences), pp. 1-332, State University of Radio Engineering, Taganrog, Russia, 1999 [in Russian]


SOFTWARE PACKAGES

188. ViVe-iMATCh – integrated Model Assembler, Translator and Checker, University Halle – University of Auckland, 2003-2006 – architect and developer

189. Visual Editor of Timed Net Condition Event Systems –University of Halle, Germany, – architect

190. VEDA – Verification Environment for Distributed Applications integrated framework for formal verification, Halle, Germany, 2000-2002 –architect and developer

191. Visual programming system GraphCycle – Taganrog, Russia, 1992- 1995, architect

192. PLC programming system InterView, 1991, Russia, over 1000 licenses –architect and developer

SOFTWARE DOCUMENTATION AND LECTURE NOTES

193. VYATKIN V., Modelling and Verification of Discrete Control Systems with Net Condition/Event Systems and iMATCh - Integrated Model Assembler Translator and Checker, Lecture notes (Book draft), pp.1-147, University of Auckland, 2006

194. VYATKIN, V., Centralized and Distributed Controller Design in Industrial Automation, Lecture notes, pp.1-26, University of Auckland, 2006


196. VYATKIN V, Methodology of development and debugging of control programs in the InterView environment, pp. 1 - 130, AutoVAZ, 1993 (in Russian)


TECHNICAL REPORTS


201. VYATKIN, V., KARRAS, S., PFEIFFER, T. 'Validatable Architecture for Intelligent Automation Systems - Executable level', VAIAS Project technical report, Martin Luther University of Halle-Wittenberg, Halle, Germany, 2005, 1-6


204. Valery Viatkin, Koji Nakano, Tatsuya Hayashi Logic evaluations as processing of queries using binary decision diagrams, Nagoya Institute of Technology, Technical report #TR96-07, 1996


208. Vyatkin V., Ivanov G., Barzolevskiy F., System GraphMicrol for computer-aided programming of controllers Lomikont-2, technical report, pl-22, TSURE, Russia, 1992 (in Russian)


