

Publication List

J.-D. Decotignie, May 2014

BOOKS

- J.-D. Decotignie, "Les hommes qui comptent: la prodigieuse aventure de l'ordinateur", in Miroir des Techniques XIIIe-XXe siècle, SQP, St Sulpice, Suisse, 1991.
- J.-D. Decotignie, "Le Logiciel", in Guide de l'Informatique, J.-M. Blanc, Le Mont, 1989.
- J.-D. Decotignie, "Fieldbus", in The Industrial Electronics Handbook, CRC Press, Boca Raton, FL, USA, 1996.
- J.-D. Decotignie, "Which Network for Which Application", in Handbook on Information Technology in Control Automation, CRC Press, 2005.
- J.-D. Decotignie, "Interconnection of wireline and wireless fieldbusses", in Handbook on Information Technology in Control Automation, CRC Press, 2005.
- J.-D. Decotignie, "Which Network for Which Application", in the Industrial Communication Technology Handbook, CRC Press, 2005.
- J.-D. Decotignie, "Interconnection of wireline and wireless fieldbusses", in the Industrial Communication Technology Handbook, CRC Press, 2005.
- D. Auslander, J.-D. Decotignie, "Network Fundamentals", Handbook of Networked and Embedded Control Systems, Birkhauser, 2005.
- J.-D. Decotignie, "Ethernet Industriel", in Traité I2C, Volume II Systèmes Temps Réel : Ordonnancement, Réseaux, Qualité de Service, Hermès, 2006.

PAPERS IN REVIEWED JOURNALS AND INTERNATIONAL CONFERENCES

- [1] H.Yepez, J.-D.Decotignie, F.Gardiol, "Broadband non destructive method for complex permittivity measurement", International Symposium on Microwave Diagnostics of Semiconductors, Porvoo, Finland, pp.263-275, July 1977.
- [2] J.-D. Decotignie, F.Gardiol, "Méthodes d'analyse de la propagation dans les fibres optiques", Bulletin ASE/SEV, vol.70, pp.830-7, July 1979.
- [3] J.-D. Decotignie, "Analyse de la propagation dans un milieu à symétrie circulaire et profil de permittivité quelconque: approximation par fonction en escalier", AGEN Mitteilungen, 30, pp.59-68, October 1980.
- [4] J.-D. Decotignie, O.Parriaux, F.Gardiol, "Wave propagation in lossy and leaky planar optical waveguides", AEU 35, pp.201-4, 1981.
- [5] J.-D .Decotignie, O.Parriaux, F.Gardiol, "Wave propagation in inhomogeneous diffused channel guide using a finite-difference technique", 1st European Conference on Integrated Optics, pp.40-42, London, Sep.14-15, 1981.
- [6] J.-D. Decotignie, O.Parriaux, F.Gardiol, "Birefringence properties of twin core fibers by finite differences", Journal of Optical Communications, vol.3, pp.8-12, 1982.
- [7] J.-D. Decotignie, H.Mulkens, "Commande numérique à base de processeur de signal TMS320" Colloque international Automatique Appliquée, pp.63-71, Nice, France, May 23-25, 1984.
- [8] H. Mulkens, J.-D. Decotignie, "A microcomputer architecture for modular CNC", Eurocon 84, pp.389-393, Brighton, U.K., Sept. 26-28, 1984.
- [9] E. Debourse, J.-D. Decotignie, H. Mulkens, "Computerized numerical control for machine-tool", IASTED international symposium, AI-85, pp.65-70, Grindelwald, Switzerland, Feb.19-22, 1985.
- [10] J.-D. Decotignie, "Hiérarchisation des réseaux locaux industriels: vers un réseau de capteurs et d'actionneurs", Journées d'Electronique 85, pp.305-314, Lausanne, Switzerland, Oct.15-17, 1985.

- [11] J.-C. Gregoire, J.-D. Decotignie, M. Gandar, "Conception d'une commande numérique de machine-outil ", *ibid*, pp.353-362.
- [12] D. Desmons, J.-D. Decotignie, "Field Bus in the Numerical Control of Machine-Tools: How to Get the Best of It", *Int. Workshop on Industrial Automation Systems*, pp.79-83, Tokyo, Japan, Feb.4-6, 1987.
- [13] J.-D. Decotignie, P. Pleinevaux, "Field Bus in the Hierarchy of Factory Communications: the Limits of a Classical Approach", *Workshop on Factory Communications, N.B.S.*, pp.3-16, Gaithersburg, Maryland, March 17-18, 1987.
- [14] P. Pleinevaux, J.-D. Decotignie, D. Desmons, "Network Management Architecture of Centrally Controlled Field Bus", *EFOC/LAN 87*, pp.326-30, Basle, Switzerland, June 3-5, 1987.
- [15] G.Ulloa, J.-D. Decotignie, "Field Bus: a real alternative for time-critical networks", *EFOC/LAN 88*, pp.334-337, Amsterdam, June 29-July 1, 1988.
- [16] J.-D. Decotignie et al., "The application of MMS to remote CNC control", *ibid*, pp. 349-353.
- [17] J.-D. Decotignie, P. Pleinevaux, "Time Critical Communications Networks: Field Busses", *IEEE Network Magazine*, vol.2, No.3, pp.55-63, May 1988.
- [18] J.-D. Decotignie, P. Pleinevaux, "Field Buses in Manufacturing Automation: A Study of the Application Layer Requirements", *Proc. of the 8th IFAC Workshop on Distributed Control Systems*, Vitznau, Switzerland, Sept. 13-15, 1988.
- [19] S. Kumaran, J.-D. Decotignie, "Multicycle Polling in the Field Bus Context", *Proceedings MIMI 89*, pp. 144-7, Zürich, June 26-29, 1989.
- [20] S. Kumaran, J.-D. Decotignie, "Multicycle operation in a Field Bus: Application Layer Implications", *Proceedings IECON 89*, pp. 531-6, Philadelphia, Nov.4-10, 1989.
- [21] J.-D. Decotignie, J.-C. Gregoire, "Integrating the Numerical Controller and the FMS", *Ibid*, pp.675-680.
- [22] J.-P. Baguet, J.-D. Decotignie, F. Guidec, L. Ruiz, G. Ulloa, "Fieldbus Requirements and Architecture for CNC", invited conference, *ECC 91*, Grenoble, France, July 1991.
- [23] B. Plé, J.-D. Decotignie, "Design of Man-Machine Interface for a Computerized Numerical Controller", *proceedings of IECON 91*, pp. 932-937, Kobe, Japan, Oct.28-Nov.1, 1991.
- [24] J.-D. Decotignie, "Distributed Path and Speed Control in Machine-Tool Axis Motion", *proceedings of IECON 91*, pp. 772-777, Kobe, Japan, Oct.28-Nov.1, 1991.
- [25] M. Moreaux, J.-D. Decotignie, "CNC and PLC: are they one and the same for machine-tool", *proceedings of IECON 91*, pp. 924-927, Kobe, Japan, Oct.28-Nov.1, 1991.
- [26] J.-D. Decotignie, "Le Laboratoire de Productique de l'EPFL: une réponse aux défis de l'usine de demain", *actes du congrès IML 92 "Logistique intégrée et gestion de production"*, pp.272-280, Basle, Switzerland, Jan.20-21, 1992.
- [27] J.-D. Decotignie, P. Pleinevaux, "A survey on Industrial Communication Networks", *Annales des Télécommunications*, invited paper, Vol.48, No.9-10, pp.435-448, 1993.
- [28] P. Raja, J. Hernandez, J.-D. Decotignie, G. Noubir, "Design and Implementation of a Robust Fieldbus Protocol", *Proc. of the IEEE Int. Symposium on Industrial Electronics*, Budapest, June 1-3, 1993, pp.560-564.
- [29] J.-D. Decotignie, "Fulfilling Temporal Constraints in Fieldbus", *IECON 93*, Hawaii, Nov.15-19, 1993, pp.519-524.
- [30] P. Raja, J. Hernandez, L. Ruiz, C. Fuhrman, G. Noubir, J.-D. Decotignie, "Synchronous Model for Fieldbus Application", *IECON 93*, Hawaii, Nov.15-19, 1993, pp.525-529.
- [31] P. Raja, K. Vijayananda, J.-D. Decotignie, "Polling Algorithms and their Properties for Fieldbus Networks", *IECON 93*, Hawaii, Nov.15-19, 1993, 530-534.
- [32] P. Raja, K. Vijayananda, L. Ruiz, J. Hernandez, J.-D. Decotignie, "On the Behaviour of Synchronous Networks in the Presence of Real-Time Constraints", *Proc. Int. Conf. on Parallel and Distributed Computing Systems*, Louisville, Oct. 14-16, 1993, pp.97-105.
- [33] P. Raja, G. Noubir, L. Ruiz, J. Hernandez, M. Riese, J.-D. Decotignie "Analysis of a Class of Polling Protocols for Fieldbus Networks", *ICDDS 93*, Palam de Majorca, Sep.15-17, 1993, pp.139-155.
- [34] P. Raja, L. Ruiz, J. Hernandez, J.-D. Decotignie, "Communication Issues Related to the Application of Systolic/Synchronous Concepts for Real-Time", *Int. Conf. on Signal Processing and Applications*, Santa Clara, Sep.28-Oct. 1st, pp.1105-1113, 1993.

- [35] P. Raja, L. Ruiz, J. Hernandez, G. Berthet, J.-D. Decotignie "Efficiency Issues of Polling Protocols for Fieldbus Networks", Proc. SICON/ICIE, Singapore, Sept.6-10, 1993, pp.821-826.
- [36] P. Raja, J. Hernandez, L. Ruiz, G. Noubir, J.-D. Decotignie "A Software Architecture for Maintaining Temporal Consistency in a Distributed Real-Time Environment", Proc. COMSAC '93, Phoenix, Nov., 1993.
- [37] P. Raja, G. Noubir, L. Ruiz, J. Hernandez, J.-D. Decotignie, "Analysis of Polling Protocols for Fieldbus Networks", ACM Computer Communication Review, Vol.23, No.3, July 1993, pp.69-90.
- [38] P. Raja, J. Hernandez, L. Ruiz, C. Fuhrman, J.-D. Decotignie, "DRUGH: A Simulator for Distributed Real-Time Applications", Proc. ESS'93, Delft, Oct.25-28, 1993, pp.423-429.
- [39] P. Raja, G. Noubir, L. Ruiz, J. Hernandez, J.-D. Decotignie, "Synchronous Model for Distributed Real-Time Control Systems", Proc. ICPADS'93, Taipei, Taiwan, Dec.15-17, 1993, pp.26-30.
- [40] P. Raja, J.-D. Decotignie, "Die Feldbusse. Der Grosse Basar, Teil 1: Die Probleme der Industriellen Kommunikation", Bulletin ASE/SEV, No.21, 1993, pp.11-17.
- [41] P. Raja, J.-D. Decotignie, "Die Feldbusse. Der Grosse Basar, Teil 2: Das Pflichtenheft", Bulletin ASE/SEV , No.25, pp.26-30, 1993.
- [42] P. Raja, J.-D. Decotignie, "Die Feldbusse. Der Grosse Basar, Teil 3: Vergleich von existierenden Lösungen - *Fieldbus: comparison of existing solutions*", Bulletin ASE/SEV, No. 3, pp.27-34, 1994.
- [43] J.-D. Decotignie, P. Prasad, "Spatio-Temporal Constraints in Fieldbus: Requirements and Current Solutions", 19th IFAC/IFIP Workshop on Real-Time Programming, Isle of Reichenau, June 22-24, pp.9-14, 1994.
- [44] K. Vijayananda, G. Berthet, P. Raja, J.-D. Decotignie, "An Architecture of a MAP Stack for Real-Time Programming", *ibid*, pp.1-7.
- [45] P. Raja, L. Ruiz, J.-D. Decotignie, "Modeling and Scheduling Real-Time Control Systems with Relative Consistency Constraints", Proc. of the 6th Euro Workshop on Real-Time Systems, Vaesternaas, Sweden, June 15-17, 1994.
- [46] L. Ruiz, J.-D. Decotignie, "Fieldbus - a Network for Process Level Communication", IEEE Industrial Electronic Society Newsletter, Vol.41, No.3, Sept. 94, pp.4-6.
- [47] G. Noubir, P. Raja, J.-D. Decotignie, "Simulating the Fieldbus Synchronous Model by Timed Petri Nets", Proc. of the 20th Annual Conference of the IEEE Industrial Electronics Society, IECON'94, Bologna, Sept.5-9, 1994.
- [48] J.-D. Decotignie, J.-P. Bardyn, B. Steenis, "Integration of WorldFIP Bus in Low-Power ASICS for Sensors", SENSOR-94, Cleveland, USA, Sept. 19-22, 1994.
- [49] J.-D. Decotignie, "Fieldbus and CNC Architecture: towards a CNC software factory", 3rd IEEE Symposium on Emerging Technologies & Factory Automation (ETFA), Tokyo, Japan, Nov.6-10, 1994.
- [50] P. Raja, L. Ruiz, K. Vijayananda, J.-D. Decotignie, "A Conceptual Framework for Distributed Control Applications", *ibid*.
- [51] C. Fuhrman, S. Messina, J.-D. Decotignie, "Fault Tolerant Techniques Integrating MMS and ISIS", *ibid*.
- [52] J.-D. Decotignie, M. Moreaux, P. Baumann, K. Lermer, "Refinement for Z Specification of Real-Time Safe and Complex Systems", Séminaire du Module 1 du programme prioritaire en informatique du Fonds National Suisse de la Recherche Scientifique, Bern, Nov. 24, 1994.
- [53] J.-D. Decotignie, "Rationals for the Design of a Flexible Machining Education and Research Facility", 2nd Int. Conf. on Industrial Automation, Nancy, France, June 7-9, 95.
- [54] O. Seghrouchni, J.-D. Decotignie, "Un modèle formel pour les applications de contrôle commande temps-réel distribuées autour d'un réseau de terrain", *ibid*.
- [55] Ph. Morel, R. Muralt, J.-D. Decotignie, "Wireless Extension for Fieldbus", *ibid*, **Best Contribution Award**
- [56] T. Kouthon, G. Noubir, P. Raja, J.-D. Decotignie, "Modeling Distributed PLC Control", 3rd IFAC/IFIP Workshop on Algorithms and Architectures for Real-Time Control, AARTC'95, Ostende, Belgium, May 31-June2, 1995, pp.215-221.
- [57] M. Moreaux, J.-D. Decotignie, C. Fuhrman, "Remote Procedure Call for Real-Time Multiprocessor Applications, *ibid*, pp.337-343.
- [58] J.-D. Decotignie, L. Ruiz, "FIP Fieldbus and real-time distributed automation", Proc. Fieldbus Technologie, Vienna, Austria, Sept.26-27, 1995, pp.44-52.
- [59] L. Ruiz, P. Raja, N. Fisher, J.-D. Decotignie, "Self Configuration Protocol for Hard-Real-Time Networks", Proc. 13th IFAC Workshop on Distributed Computer Control Systems, Toulouse, France, Sept. 27-29, 1995, pp.103-106.

- [60] J.-D. Decotignie, M.-A. Peraldi, "Producer Distributor Consumer Model on Controller Area Network", 20th IFAC/IFIP Workshop on Real-Time Programming, Fort Lauderdale, FL., USA, Nov.6-10,1995, pp.
- [61] M.-A. Peraldi, J.-D. Decotignie, "A Design Framework for Real-Time Reactive Applications", 21th Annual Conference of the IEEE Industrial Electronics Society, IECON'95, Orlando, FL., USA, Nov.6-10, 1995, pp.144-149.
- [62] M.-A. Peraldi, T. Kouthon, J.-D. Decotignie, "Distributing PLC Control", *ibid*, pp.1614-19
- [63] M.-A. Peraldi, J.-D. Decotignie, Th. Kouthon, "Intelligent Control for Safety Critical Applications", Int. Conf. on Systems Man and Cybernetics, Vancouver, Canada, Oct.22-25, 1995.
- [64] M.-A. Peraldi, Th. Kouthon, J.-D. Decotignie, "On Criteria for Distributing PLC Control", Int. Conf. on Systems Man and Cybernetics, Vancouver, Canada, Oct.22-25, 1995, pp.3822-27.
- [65] M.-A. Peraldi, J.-D. Decotignie, Combining Real-Time Features of Local Area Networks FIP and CAN, Proceedings of the 2nd International CAN Conference, ICC'95, London-Heathrow, October 3-4, 1995, pp. 8-11 to 8-21.
- [66] Ph. Morel, J.-D. Decotignie, "Integration of wireless mobile nodes in MAP/MMS", 1Proc. 13th IFAC Workshop on Distributed Computer Control Systems, Toulouse, France, Sept. 27-29, 1995, pp.149-152.
- [67] J.-D. Decotignie, P. Raja, "On the Necessary Real-Time Conditions for the Producer Distributor Consumer Model", IEEE Workshop on Factory Communication Systems, Lausanne, Switzerland, Oct.6-9, 1995, pp.125-133.
- [68] S. Chutani, J.-D. Decotignie, "A Perspective on Fault Diagnosis of Industrial Communication Networks", IEEE Workshop on Factory Communication Systems, Lausanne, Switzerland, Oct.6-9, 1995, pp.91-96.
- [69] J.-D. Decotignie, "Open System Architecture - A Communication Viewpoint", Proceedings Workshop Monolin, Paris, 21 septembre 1995, pp. 2-1 à 2-18.
- [70] P. Raja, J. Hernandez, L. Ruiz, F. Guidec, J.-D. Decotignie, "Simulating fieldbus applications with DRUGH simulator", *Computer in Industry* 27, pp. 43-51, 1995.
- [71] Ph. Morel, J.-D. Decotignie, "Integration of wireless mobile nodes in MAP/MMS", *Control Engineering Practice*, Vol. 4 no 6, 1996, pp. 825-829.
- [72] S. Koppenhoefer, J.-D. Decotignie, " Formalizing the Adapted Synchronous Model", Proceedings of the 14th IASTED International Conference on Applied Informatics, Innsbruck, Austria, Feb. 20-22, 1996, pp. 303-307.
- [73] J.-D. Decotignie, D. Auslander, M. Moreaux, "Fieldbus Based Integrated Communication and Control Systems - Architectural Implications", 4th Int. Symposium on Advanced Motion Control, Mie, Japan, March 1996.
- [74] D. Auslander, J.-D. Decotignie, "Executives for Real-Time Control Systems", 1996 Japan-USA Symposium on Flexible Automation, Boston, Ma, June 1996.
- [75] J.-D. Decotignie, D. Auslander, "Integrated Communication and Control Systems with Fieldbusses", 1996 Japan-USA Symposium on Flexible Automation, Boston, Ma, June 1996.
- [76] L. Ruiz, N. Fischer, J.-D. Decotignie, "Hard Real-Time Communication Software Development Technics", Proceedings IEEE International Symposium on Industrial Electronics, ISIE'96, Warsaw, Poland, June 14-17, 1996, pp. 1021-1024.
- [77] Ph. Morel, A. Croisier, J.-D. Decotignie, "Requirements for Wireless Extensions of a FIP Fieldbus", ETFA'96, 5th IEEE International Conference on Emerging Technologies and Factory Automation, Kauai, Hawaii, November 18-21, 1996, pp.116-122.
- [78] S. Koppenhoefer, J.-D. Decotignie, D. Auslander, "Fieldbus Based Integrated Communication and Control Systems", Proceedings CESA'96 IMACS-IEEE/SMC Multiconference, Computational Engineering in Systems Applications, Lille, France, July 9-12, 1996, pp.1316-1321.
- [79] T. Kouthon, J.-D. Decotignie, S. Koppenhoefer, "On Distribution of Grafset Software", *ibid* pp.498-506.
- [80] T. Kouthon, J.-D. Decotignie, "Improving Time Performances of Distributed PLC Applications", ETFA'96, 5th IEEE International Conference on Emerging Technologies and Factory Automation, Kauai, Hawaii, November 18-21, 1996.
- [81] Ph. Morel, A. Croisier, J.-D. Decotignie, "Wireless Extensions of a Factory Instrumentation Fieldbus (FIP)", Proceedings ICARCV'96 Fourth International Conference on Control Automation Robotics and Vision, Westin Stamford, Singapore, December 3-6, 1996.

- [82] L. Ruiz, J.-D. Decotignie, "Scheduling Aperiodic Messages in the Controller Area Network CAN" , Proceedings ICARCV'96 Fourth International Conference on Control Automation Robotics and Vision, Westin Stamford, Singapore, December 3-6, 1996.
- [83] L. Ruiz, J.-D. Decotignie, "Priority Inversion in Dynamic Priority Driven Scheduling Algorithms due to Imperfect Clock Synchronization" Proceedings ETFA'96, 5th IEEE International Conference on Emerging Technologies and Factory Automation, Kauai, Hawaii, November 18-21, 1996, pp.27-34.
- [84] S. Koppenhoefer, J.-D. Decotignie, "Formal Verification for Distributed Real-Time Control: a periodic Producer/Consumer", Proceedings of the Fourth IEEE Workshop on Real-Time Applications RTAW'96, Montréal, Quebec, Canada, October 21-25, 1996, pp. 230-238.
- [85] S. Koppenhoefer, J.-D. Decotignie, "Predicting Dispersion in Distributed Automatic Control Systems", ISIA'96 9th International Symposium in Informatics Applications, Antofagasta, Chile, November 18-22, 1996.
- [86] S. Koppenhoefer, J.-D. Decotignie, " Parameter-Analysis in Industrial Integrated Communication and Control Systems" Proceedings of the 1st IEEE International Conference on Industrial Engineering Applications and Practice, University of Houston, Houston, Texas, United States, Dec. 4-7, 1996.
- [87] M. Aboutabl. Ashok K. Agrawala. J.-D. Decotignie, "Temporally Determinate Disk Access: An Experimental Approach", Joint International Conference on Measurement and Modeling of Computer Systems, Madison, Wisconsin, Poster paper, June 22-26, 1998.
- [88] M. Aboutabl. Ashok K. Agrawala. J.-D. Decotignie, "Temporally Determinate Disk Access: An Experimental Approach", Performance-Evaluation-Review 26 (1), June 1998, pp.280-1.
- [89] L. Ruiz, J.-D. Decotignie, "CAN+: A Dynamic Dispatcher For Controller Area Network Can" Proceedings of VIII Congreso Latinoamericano de Control Automatico, XIII Congreso de la Asociacion Chilena de Control Automatico, CL, November 1998, 2, 589.
- [90] L. Ruiz, Ph. Dallemagne, J.D. Decotignie, "Using Firewire as Industrial Network", Proc. of XIX Int. Conference of the Chilean Computer Science Society SCCC'99, Talca, CL, November 1999, pp.201-208.
- [91] J.-D. Decotignie, L. Ruiz, Ph. Dallemagne, "Un réseau de terrain à haute performance sur la base de Firewire", Proc. of European Symposium Sensor Networks and Communications INNOCAP'99, Grenoble, France, 21-22 avril 1999, pp.133-138
- [92] J.D. Decotignie, "Some Future Directions in Fieldbus Research and Development", Proc. of the Fieldbus Technology Conference FeT'99, Magdeburg, D, 12-13 Septembre 1999, pp.308-312
- [93] A. El-Hoiydi, J.-D. Decotignie, "Soft Deadline Bounds for Two-Way Transactions in Bluetooth Piconets under Co-channel Interferences", Proc. ETFA 2001, Oct. 15-18, 2001, Juan-Les-Pins, France, pp.143-150.
- [94] J.-D. Decotignie, A perspective on Ethernet-TCP/IP as a Fieldbus", **keynote paper**, Proc. FeT'2001, Nov. 15-16, 2001, Nancy, France, pp. 23-28.
- [95] Ph. Dallemagne, J.-D. Decotignie, "A Comparison of USB 2.0 and Firewire in Industrial Applications, *ibid*, pp. 51-58.
- [96] J.-D. Decotignie, Ph. Dallemagne, A. El-Hoiydi, "Architectures for the Interconnection of Wireless and Wireline Fieldbusses", *ibid*, pp.313-318.
- [97] Ph. Dallemagne, J.-D. Decotignie, "An Evaluation of the Ability of USB to Fulfil Real-Time Communication Requirements", Proc. ICT 2001, Bucharest, June 4-7, 2001. **Best Paper Award**.
- [98] J.-D. Decotignie, "Wireless Fieldbusses - a Survey of Issues and Solutions", invited paper, IFAC World Congress, Barcelona, July 21-26, 2002.
- [99] J.-D. Decotignie, "Délai de propagation dans les réseaux de capteurs sans fil autoorganisés", RTS'02, Paris, Mars 26-28, 2002.
- [100] P. Dallemagne, J.-D. Decotignie, L. Mealares, K. Kafandaris, F. Schneeberger, "Mécanismes de liaisons entre composants pour les applications industrielles embarquées et temps-réel", RTS'03, Paris, April 1-3, 2003.
- [101] P. Dallemagne, J.-D. Decotignie, A. Restrepo-Zea, "Robust and Secure Reconfiguration of Industrial Devices over Internet", 5th IFAC International Symposium on Intelligent Components and Instruments for Control Applications, (SICICA 2003), Aveiro, PT, July 2003, 17
- [102] A. El-Hoiydi, J.-D. Decotignie. Simulation of Low Power MAC Protocols for Wireless Sensor Networks. In *Proc. IFAC Int. Conf. on Fieldbus Systems and their Applications*, pages 65-72, Aveiro, Portugal, July 2003.

- [103] A. El-Hoiydi, J.-D. Decotignie, C. Enz, E. Le Roux. Poster Abstract: WiseMAC, An Ultra Low Power MAC Protocol for the WiseNET Wireless Sensor Network. In Proc. 1st ACM SenSys Conf., pages 302-303, November 2003.
- [104] A. El-Hoiydi, J.-D. Decotignie, J. Hernandez, "Low Power MAC Protocols for Infrastructure Wireless Sensor Networks", In Proc. European Wireless (EW'04), Barcelona, Spain, February 2004), pp. 563-569.
- [105] P. van der Stok et al., "The FABRIC project",. First European Workshop on Software Architecture, EWSA 2004, 21-22 May 2004, St Andrews, UK, pp. 272-278.
- [106] A. El-Hoiydi, J.-D. Decotignie, "WiseMAC: An Ultra Low Power MAC Protocol for the Downlink of Infrastructure Wireless Sensor Networks", In Proceedings of the International Symposium on Computers and Communications ISCC, Alexandria, Egypt, June 2004, pp. 244-251.
- [107] A. El-Hoiydi, J.-D. Decotignie, "WiseMAC: An Ultra Low Power MAC Protocol for Multi-hop Wireless Sensor Networks", In Proceedings of the First International Workshop on Algorithmic Aspects of Wireless Sensor Networks (ALGOSENSORS 2004), Lecture Notes in Computer Science, LNCS 3121, pages 18-31. Springer-Verlag, July 2004.
- [108] C. Enz, A. El-Hoiydi, J.-D. Decotignie, and V. Peiris, "Wisenet: An ultralow-power wireless sensor network solution", IEEE Computer, 37(8):62-70, August 2004.
- [109] J.D. Decotignie, "Ethernet based real-time and industrial communications", Proceedings of the IEEE, vol. 93, Issue 6, June 2005, pp.1102 - 1117
- [110] Amre El-Hoiydi, J.-D. Decotignie: Low Power Downlink MAC Protocols for Infrastructure Wireless Sensor Networks. MONET 10(5): 675-690 (2005)
- [111] Amre El-Hoiydi, et al., "The ultra low-power wiseNET system", DATE 2006: 971-976.
- [112] J. Rousselot, Amre El-Hoiydi, J.-D. Decotignie, "Performance evaluation of the IEEE 802.15.4A UWB physical layer for Body Area Networks", ISCC 2007: 969-974
- [113] J. Rousselot, A. El-Hoiydi, J.-D. Decotignie, On the Problem of Near-Far Interference with Impulse Ultra Wide Band Radios. European Ultra Wide Band Radio Technology Workshop (UWB 2007), Grenoble, France, May 10-11 2007.
- [114] J. Rousselot, Amre El-Hoiydi, J.-D. Decotignie, "Trade-off Analysis of Communication Protocols for Wireless Sensor Networks", APRES 2008, April 2008.
- [115] J. Rousselot, Amre El-Hoiydi, J.-D. Decotignie, " WideMac: a low power and routing friendly MAC protocol for Ultra Wideband sensor networks", IEEE ICUWB, Volume 3, 10-12 Sept. 2008 Page(s):105 - 108
- [116] J. Rousselot, Amre El-Hoiydi, J.-D. Decotignie, " Low power medium access control protocols for wireless sensor networks", European Wireless Conference, 22-25 June 2008 Page(s):1 - 5.
- [117] J.-D. Decotignie, "Real-Time and Wireless Sensor Networks : why do we need another view at it ?", keynote paper, 7th International Workshop on Real-Time Networks RTN'08, Prague, July 1, 2008.
- [118] J. Rousselot, J. Farserotu, J.-D. Decotignie, "Reconciling Ultra Low Power Consumption, Low Latency and High Throughput Communications : The WiseMAC-HA Protocol", 11th Int. Symposium on Wireless Personal and Multimedia Communications, Saariselkä, invited paper, 9 September 2008
- [119] D. Pigué, Ph. Dallemagne, J.-D. Decotignie, A remote reconfiguration mechanism for WiseNET wireless sensor networks, retrust 2008, Trento, Italy.
- [120] J. Rousselot, J.-D. Decotignie, A High-Precision Ultra Wideband Impulse Radio Physical Layer Model for Network Simulation. In Proc. of the Second International Omnet++ Workshop, part of the 3rd ICST Int. Conference on Simulation Tools and Techniques (Simu'TOOLS 2009), pp. 1-8, Rome, 6 March 2009.
- [121] J. Rousselot, J.-D. Decotignie, M. Aoun, P. van der Stok, R. Serna Olivera, G. Fohler. Accurate Timeliness Simulations for Real-Time Wireless Sensor Networks. In Proc. 3rd European Symposium on Computer Modeling and Simulation (EMS 2009), Athens, Greece, pp. 476-481, 2009.
- [122] J. Rousselot, J.-D. Decotignie, Wireless Communication Systems for Continuous Multiparameter Health Monitoring. In Proc. of the IEEE International Conference on Ultra-Wideband (ICUWB 2009), invited paper, pp. 480-484, Vancouver, Canada, September 2009.
- [123] J. Rousselot, Ph. Dallemagne, J.-D. Decotignie, Deployments of Wireless Sensor Networks performed by CSEM. In Proc. of the International Conference on Cognitive Systems with Interactive Sensors (COGIS'09), pp. , Paris, France, 16-18 November 2009.
- [124] J.-D. Decotignie, "The Many Faces of Industrial Ethernet [Past and Present]", Industrial Electronics Magazine, IEEE, Volume: 3 (1), pp. 8 - 19, 2009.

- [125] D. Piguet, J.-D. Decotignie, J. Rousselot. A MAC protocol for micro flying robots coordination. In Proc. 9th International Workshop on Real-Time Networks (RTN'2010), pp. 1-6, 2010.
- [126] J. Rousselot, J.-D. Decotignie: When ultra-low power meets high performance: the WiseMAC high availability protocol. SenSys 2010: 441-442
- [127] J. Rousselot, J.-D. Decotignie, On the best way to cut a body area network's wires. In Proc. of the IEEE Int. Conference on Communications (ICC 2010), pp. 1-5, Capetown, South Africa, 23-27 May 2010.
- [128] J. Gerrits et al., "A low-complexity C-band radar for non-invasive respiration measurement", Int. Symp. on Applied Sciences in Biomedical and Communication Technologies (ISABEL), 2010, pp.1-5.
- [129] J. Rousselot, J.-D. Decotignie, An Ultra Wideband Impulse Radio PHY Layer Model for Network Simulation. SIMULATION January 2011 vol. 87 no. 1-2 82-112.
- [130] M. Steine, et al., "Proactive reconfiguration of wireless sensor networks". MSWiM 2011: 31-40
- [131] J. Rousselot, J.-D. Decotignie: An efficient and modular method for the simulation of real-time wireless embedded systems. SimuTools 2011: 87-89
- [132] J. Farserotu., J. Baborowski, J.-D. Decotignie et al., "Smart skin for tactile prosthetics", 6th int. symp. on Medical Information and Communication Technology (ISMICT), pp.1-8, 2012.
- [133] M Achtelik, J.-D. Decotignie, et al. "SFly: Swarm of micro flying robots". IROS 2012: 2649-2650.
- [134] C. Antfolk et al., "The WiseSkin artificial skin for tactile prosthetics: a power budget investigation", 8th International Symposium on Medical Information and Communication Technology (ISMICT), p 4 pp., 2014
- [135] A. Vorobyov et al., "Folded loop antenna as a promising solution for a cochlear implant", 8th European Conference on Antennas and Propagation, EuCAP 2014, p 1735-1738, 2014
- [136] P. Dallemagne, J.-D. Decotignie et al., "Suitability of the IEEE 802.15.4e extensions for spacecraft and launcher communications", ADASIA 2014.
- [137] P.Pelissou et al., "Simulated IEEE 802.15.4a BER results (multipath and coexistence) in the spacecraft environment", IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE), 2014

PAPERS IN LARGE AUDIENCE MAGAZINES

- [1] J.-D.Decotignie, F.Gardiol, "Tendances de l'optique guidée", Industrie et Technique 37, p.1-3, 1982.
- [2] E.Debourse, J.-D.Decotignie, D.Desmons, H.Mulkens, "A Modular Machine Tool CNC Based on G-64 Bus", G-64 Only, Vol.2, Winter 1986, pp.25-30.
- [3] E.Debourse, J.-D.Decotignie et al., "Une CNC modulaire et performante", Marché Suisse des Machines, No 4, pp.33-37, Fév. 87.
- [4] J.-D.Decotignie, D.Desmons, "L'intelligence dans la machine: misez tout sur le bus", Ibid, No 5, pp.17-25, Mars 87.
- [5] E.Debourse, J.-D.Decotignie et al., "Eine modulare, leistungsfähige Steuerung", Schweizer Maschinenmarkt, No 19, pp.32-41, Mai 87.
- [6] J.-D.Decotignie, D.Desmons, "Intelligenz in der Maschine", Schweizer Maschinenmarkt, No 20, pp.28-35 and No 21, pp.28-33, Mai 87.
- [7] J.-D. Decotignie, "Vers un centre de productique à l'EPFL", Polyrama EPFL, pp.20-25, Avril 1989.
- [8] J.-D. Decotignie, "La productique à l'EPFL: bilan et perspectives", Marché Suisse des Machines 58, No.2, pp.12-18, Janvier 1990.
- [9] M. Moreaux, J.-D. Decotignie, "Vers une CAO de commande numérique", Marché Suisse des Machines 58, No.4, pp.14-17, Février 1990.
- [10] J.-D. Decotignie, "Le productique et les méthodes japonaises: simplifier avant d'automatiser", journée EPI, La gestion de production par ordinateur pour les PMI-PME, Lausanne, 26 juin 1990.
- [11] J.-D. Decotignie, "Les méthodes du génie logiciel", journée EPI "La maîtrise des coûts du logiciel", Lausanne, 27 novembre 1990.
- [12] J.-D. Decotignie, "Le logiciel", cycle "La productique", Marché Suisse des Machines, No.1, pp.32-39, janvier 1991.
- [13] P. Dallemagne, J.D. Decotignie, «Firewire, USB et le contexte industriel», J'automatise, May – June 2002, 22, 61

- [14] P. Dallemagne, J.D. Decotignie, «USB et Firewire, pourquoi pas dans l'industrie», *J'automatise*, March – April 2002, 21, 63
 - [15] J.-D. Decotignie, "Ethernet industriel, quelle réalité?", *Bulletin SEV / AES*, No 11 (2006) 25.
 - [16] J.-D. Decotignie, "Ethernet industriel, quelle réalité ?", *SWISS ENGINEERING RTS*, Avril 2008, pp. 43-47
 - [17] J.-D. Decotignie et al., "WiseNET: An Ultra Low-Power Concept for Wireless Sensor Networks", in *Technisches Messen - Platform für Methoden, Systems und Anwendungen in der Messtechnik*, vol. 77, num. 2, p. 107-112, 2010
- J.-D. Decotignie et al., "Observation et contrôle d'ouvrages par réseaux de capteurs sans fil", *Bulletin : Fachzeitschrift und Verbandsinformationen von Electrosuisse und VSE.- Fehraltorf : Electrosuisse*, Vol. 104.2013, 8, p. 28-32

CONFERENCES

- [1] "Analyse de la propagation dans des fibres à gradient d'indice: comparaison des méthodes d'analyse - *Wave propagation analysis in graded index fibres: a comparison of methods*", ETH-Zurich, Kolloquium über Moderne Probleme der theoretischen und angewandten Elektrotechnik, Zurich, October 29, 1979.
- [2] "Biréfringence dans des fibres unimodales à deux coeurs interpénétrés - *Birefringence properties of a monomode twin-core fiber*", 2nd french workshop on fiber optics monomodal transmissions, Limoges, France, June 1-2, 1981.
- [3] "Fréquences de coupure des modes supérieurs de fibres fortement elliptiques - *Higher modes cutoff frequencies in highly elliptical fibers*", 3rd french workshop on optical fiber monomodal transmissions, Marcoussis, December 1st, 1981.
- [4] *Field Bus in the Hierarchy of Factory Communications: the Limits of a Conventional Approach*", Bell Labs, Murray Hill, NJ, USA, October 6, 1986.
- [5] "On some topics in numerical control", Bell Labs, Holmdel, USA, Oct. 7, 1986
- [6] "Field Bus in the Hierarchy of Factory Communications", University of Ottawa, Canada, October 9, 1986.
- [7] "Les réseaux de terrain dans la hiérarchie des communications industrielles - *Field Busses in the hierarchy of industrial communications*", Séminaire sur les bus industriels, Lausanne, Nov.25-26, 1986.
- [8] "CIM activities at the Swiss Federal Institute of Technology", National Institute for Science and Technology, Gaithersburg, USA, Sept.16, 1988.
- [9] "Réseaux locaux industriels, pour une machine, pour un atelier, pour une usine", Rencontre EPFL-Economie, Lausanne, 7 décembre 1988.
- [10] "Les réseaux locaux industriels: quel avenir", actes de la journée "Les chemins du CIM", Fribourg, 11 octobre 1989.
- [11] "La productique à l'EPFL - bilan et perspectives", Rencontre EPFL-Economie, Lausanne, 24 janvier 1990.
- [12] "Une approche à la conception d'un système flexible d'usinage", conférence invitée, JETAI 90, Barcelone, Espagne, 19-20 avril 1990.
- [13] "Réseaux locaux industriels - état de l'art et perspectives", in "Perspectives de l'informatique pour l'an 2000", Jubilé de la Société pour les Techniques de l'Information de l'ASE, Genève, 4 novembre 1994.
- [14] "On the Necessary Real-Time Conditions for the Producer Distributor Consumer Model", University of Maryland, June 28, 1995.
- [15] "Fieldbusses: current trends and perspectives", Berkeley Process Control, Richmond, Ca, Nov. 15, 1995.
- [16] "Formal Evaluation of Control and Communication Systems", SRI International, Palo Alto, Ca, Dec. 13, 1995.
- [17] "Cross Influence of Control and Communication Systems", Univ. of Lille, France, Jan. 10, 1996.
- [18] "Réseaux locaux industriels - état de l'art et perspectives", in "Perspectives de l'informatique pour l'an 2000", Jubilé de la Société pour les Techniques de l'Information de l'ASE, Genève, 4 novembre 1994.
- [19] "Introduction to Bluetooth", ITG Conference "Bluetooth - the Future of RF Communication ?", Yverdon, 16 mai 2001.
- [20] "Ethernet TCP/IP et bus de terrain: quel avenir pour le tout Ethernet", Euroforum, Paris, 26 juin 2001.
- [21] "A Perspective on Ethernet TCP/IP as a Fieldbus", CERN, 28 septembre 2001.
- [22] "Wisenet and Wireless Fieldbuses: a Comparison", Workshop on Wireless Sensor Networks, Lausanne, August 2001.

- [22] "A Perspective on Wireless Communications in Factories", **Keynote speech**, IEEE Conf. on Emerging Technologies in Factory Automation, Juan-les-Pins, FR, October 2001.
- [23] P. Celka, R. Vetter, P. Renevey, J. Luprano, J.-D. Decotignie, C. Piguet, "Wearable Biosensing, Processing and Communication Systems, Mikrotechnik" Tagung 2003, Buchs, October 2003.
- [24] A. El-Hoiydi, J.-D. Decotignie, "WiseMAC: an Ultra Low-Power MAC Protocol for the WiseNET Wireless Sensor Network", MICS 2003 Scientific Conference, Ascona, October 2003.
- [25] "Introduction à Ethernet", Club Automation, Paris, Oct. 7, 2004.
- [26] Expressing Audio/Video communications using the publish-subscribe model, 1st Workshop on Real-Time for Multimedia, Catania, Italy, June 29, 2004, pp. 23-26, CS-Report 04-36, Technische Universiteit Eindhoven 2004-11-00.
- [27] "WiseMAC an ultra low power MAC protocol for wireless sensor networks", INRS EMT, Montréal, 18 juin 2004.
- [28] "Les réseaux de capteurs sans fil dans le suivi des personnes et d'objets", Journée géomatique suisse, Neuchâtel, 15 juin 2007.
- [29] Real-Time Wireless Sensor Network: why do we need another view at them ?, Keynote speech, RTN 2008, Prague, July 2008.
- [30] Real-Time and wireless sensor networks: is there a possible match?, Keynote speech, WFCS 2010, Nancy, May 19, 2010
- [31] A Perspective on Wireless Sensor Networks Application and Research, Invited talk, Microtechnology 2011, Prague, April 20.
- [32] Real-time and wireless sensor networks, are they compatible ?. Keynote speech, ECRTS 2012, Pisa, July 11, 2012.

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OTHERS

- J.-D.Decotignie, "Contribution à l'étude théorique de la propagation dans les guides optiques", Thèse 463, Ecole Polytechnique Fédérale, Lausanne, 1982.
- J.-D.Decotignie, H.Mulkens, "Projet d'école commande numérique de machines", film de 22 minutes décrivant les résultats du projet d'école dans le domaine de la commande numérique de machines, de la mécanique et des moteurs, mai 1987.
- nombreux rapports internes au CSEM pour l'industrie et les projets européens.