



Innovation in the Digital Age
Policy, Strategy and R&D

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JAY S. BAYNE

Founder & Principal
Stratum 4 LLC
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Research Professor
Mathematics, Statistics & Computer Science
Marquette University
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Education

PhD, EE&CS UC Santa Barbara, 1976 EE/CS
MS EE&CS, UC Santa Barbara, 1971 EE/CS
BS EE&CS, UC Santa Barbara, 1970 EE
Advanced NAUI SCUBA Certificate, 1984, Certification # A35442
FAA Instrument Rated Pilot License, 1980, Certification # 545644881

Professional Associations

IEEE: Institute of Electrical & Electronic Engineers, Sr. Member
ACM: Association for Computing Machinery, Professional Member, Distinguished Engineer

Research Interests

Distributed time-critical systems, computational science, intelligent automation, service systems, command and control systems, cyberphysical systems, cybernetics

Appointments

2016 – Present Research Professor, Marquette University, Mathematics, Statistics & Computer Science
2016 -- Present Founder/Principal, Stratum 4, LLC
2007 -- 2016 Co-Founder, Chairman & Executive Director, Milwaukee Institute, Inc.
2012 – Present Board Member, Medical Cyberworlds, Inc.
2011 – 2014 Board Member, Paragon Development Systems, Inc.
2010 – 2016 Board Member, Dedicated Computing, Inc.
2010 – Present Board Member, Wisconsin Technology Council
2006 – 2016 Adjunct Professor, Computer Science, University of Wisconsin Milwaukee
2005 – 2007 Sr. Consultant, Office Secretary of Defense/Networks & Information Integration (NII)
2003 – 2015 Founder/Principal, Meta Command Systems, Inc.
1998 – 2002 Group VP Technology, Controls Group, Johnson Controls, Inc (JCI)
1989 – 1998 Group VP Technology, ABB Automation
1984 – 1989 Group VP Technology, Combustion Engineering, acquired by ABB
1976—1985 Founder/CEO, Protocol Solutions, Inc. (PSI), acquired by Combustion Engineering
1973 – 1984 Professor, Computer Science, California Polytechnic State University, San Luis Obispo

Awards & Honors

Best Paper: 1998 AIRTC, 2003 JSCI, 2005 CCRTS, 2006 CCRTS
ACM Distinguished Engineer

US Patents

Two related patents, “Method and Systems for Network-based Real-time Command and Control of an Enterprise” (10/678,297 granted Feb 20, 2007 with 21 claims, and 11/149,965 granted Nov 16, 2010 with 30 claims) covering design aspects for autonomous regulatory and supervisory controls in complex distributed systems.

5 Primary Publications

1. Bayne, J., “Control in Decentralized Industrial Organizations,” <https://stratum4.org/wp-content/uploads/2018/02/Control-in-DIO.pdf>, February, 2018
2. Bayne, J., “Cyberspatial Mechanics,” IEEE Transactions on Systems, Man and Cybernetic—Part B, Vol. 38, No. 3, June 2008, pp 629-644
3. Bayne, J. and Paul, R., “Policy Based Command and Control,” 10th International Command and Control Research and Technology Symposium, June 2005.
4. Bayne, J., “A Software Architecture for Control of Value Production in Federated Systems,” World Multi-Conference on Systemics, Cybernetics & Informatics, Orlando, July 28th, and published in the Journal of Systemics, Cybernetics & Informatics, Vol. 1, No. 8, August 2003, awarded “Best Paper.”
5. Bayne, J., Creating Rational Organizations—Theory of Enterprise Command and Control, 2nd Edition, September 2006, 234 pages, available online at <http://www.lulu.com/shop/jay-bayne/creating-rational-organizations/paperback/product-20053680.html>

5 Secondary Publications

6. Bayne, J. and Diggs, D., “Command and Control in the Joint Task Force Enterprise,” 11th Command and Control Research and Technology Symposium (CCRTS), San Diego, CA, June 2006, awarded “Best Paper.”
7. Bayne, J. and Paul, R., “Scale Free Command and Control,” 10th International Command and Control Research and Technology Symposium, June 2005, awarded “Best Paper.”
8. Bayne, J., “Theory of Enterprise Command and Control,” Military Communications Conference (MILCOM) 2006 Conference Proceedings, Washington, DC, October 2006.
9. Bayne, J., “A Theory of Software-Mediated Enterprise Governance,” 2006 Computer Systems and Applications Conference (COMPSAC), International Workshop on Software Cybernetics (IWSC’06), Chicago, IL, September 2006.
10. Bayne, J., “The ELBA Object Model,” Ada Runtime Environment Working Group (ARTWEG), ACM SIG Ada, Santa Barbara, CA, 1995.

Stratum 4 assists clients with strategy, design, development, operation and maintenance of intelligent, time-critical, and highly available automation products and associated service systems.