

Executive Bios



JOHN R. WOOTTON
CEO of Wootton Enterprises, LLC
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Until December 2010, John was the CHIEF TECHNOLOGY OFFICER, of DRS Tactical Systems Group. (DRS is one of the top 10 Defense Contractors in the world.) He was a member of the company for over 31 years, serving in senior engineering and technology roles since 1979. Prior to that, John spent 13 years with Marconi Radar Systems in the UK, the last two years of which he served as the UK representative on a NATO Industry Advisory Group.

John has an extensive development background in a wide range of defense products. His portfolio of expertise includes radar, electro-optical systems, light electronics and heavy mechanical equipment. He has over 20 patents that represent significant improvements in product capability such as optical trackers, rapidly emplaced fuel distribution systems, next generation electrical power generation and water reclamation. The majority of these patents are focused on product differentiation. John has more than 30 refereed papers covering an even broader spectrum of topics to include image processing, semantic control, neural networks and fuzzy information processing. He has also been the guest editor for various technical journals and co-authored a book on Infrared Modeling.

John has a passion for teaching and leading innovation. This lifelong pursuit includes being a pioneer in the best practices associated with 'Design to Win' which embraces such competitive drivers as 'Design to Cost' and 'Minimal Time to Market'. John has also been actively involved in advocating student interest in engineering and sciences as reflected in his participation in multiple university advisory boards as well implementing a student internship program at DRS.

John received his undergraduate degree from Rugby College. His postgraduate work was at numerous universities to include Warwick, Leicester, Oxford (Runge Scholar in Business), and Cambridge. Most recently, he studied semi-conductor optics at the University of Boulder, Colorado. John is a member of the IEE, SPIE, NAFIPS, Association of the United States Army and the Navy League. He was honored as the Missouri Inventor of the Year in 1999.

PATENTS

- U.S. Patent 5,065,286 – Missile Tracking, Guidance and Control Apparatus
- U.S. Patent 5,180,881 – Beam Steered Laser for Fire Control Hardware-in-the- Loop
- U.S. Patent 5,224,860 – TOW Missile System Simulator
- U.S. Patent 5,249,501 – Visualization Device for Near-IR Laser Designator
- U.S. Patent 5,273,236 – Multiple Designation Missile System
- U.S. Patent 5,332,176 – Controlled Interlace for TOW Missiles Using Medium Wave Infrared Sensor or TV Sensor
- U.S. Patent 5,434,668 – Laser Vibrometer Identification Friend-or-Foe(IFF) System
- U.S. Patent 5,459,470 – Beam Steered Laser IFF System
- U.S. Patent 5,615,029 – Electro-Optic Wedge Structure for Beam Steering and Method of Manufacture
- U.S. Patent 5,764,163 – Non-Imaging Electro-Optic Vehicle Sensor Apparatus Utilizing Variance in Reflectance
- U.S. Patent 5,825,412 – Video Detection Apparatus for Monitoring a Railroad Crossing
- U.S. Patent 5,870,471 – Authentication Algorithms for Video Images
- U.S. Patent 5,937,092 – Rejection of Light Intrusion False Alarms in a Video Security System
- U.S. Patent 5,956,424 – Low False Alarm Rated Detection for a Video Image Processing Based Security Alarm System
- U.S. Patent 6,177,885 – System and Method for Detecting Traffic Anomalies
- U.S. Patent 6,190,110 – Residual Mail Detection and Container Alignment
- U.S. Patent 6,317,152 – Digital video recording system
- U.S. Patent 6,404,553 – Phase Active Diffractive Optics
- U.S. Patent 6,418,223 - Authentication Algorithms for Video Images
- U.S. Patent 6,535,637 – Pharmaceutical pill recognition and verification system
- U.S. Patent 6,770,865 – Systems, Methods and Devices for Detecting Light and Determining its Source
- U.S. Patent 7,186,345 – Systems for water purification through supercritical oxidation
- U.S. Patent 7,658,070 – Method and apparatus for improving the energy conversion efficiency of electrical power generators
- U.S. Patent 7,688,605 – Systems and methods for reducing the magnitude of harmonics produced by a power inverter
- U.S. Patent 7,722,823 – Systems and methods for air purification using supercritical water oxidation

AWARDS

- Missouri Inventor Of The Year 1999

PROFESSIONAL AFFILIATIONS

- Chartered Engineer
- Member of the Institute of Electrical Engineers
- North American Fuzzy Information Processing Society
- SPIE, International Society for Optical Engineering

Technical Book

- **"Electro-Optical Systems Modeling"** G.Waldman & J.R. Wootton Publisher Artech House 1992
ISBN 0-89006-541-1

Sample of Published Papers

- Moore, J., Hobson, G., Waldman, G., Wootton, J., "An Automated Real-Time Direction-Sensitive Motion Detection System", *2000 IEEE International Conference on Systems, Man & Cybernetics*, Nashville, TN, October 2000.
- Moore, J., Hobson, G., Waldman, G., Wootton, J., "A Real-Time Visual Inspection System for Automated Prescription Dispensing", *2000 IEEE International Conference on Systems, Man & Cybernetics*, Nashville, TN, October 2000.
- Waldman, G., Wootton, J., Hobson, G., "Visual Detection with Search: An Empirical Model", *IEEE Transactions, Systems, Man and Cybernetics*, Vol. 2, No. 3, May/June 1991.
- Wootton, J., Keller, J., Carpenter, C., Hobson, G., "A Multiple Hypothesis Rule-Based Automatic Target Recognizer", *Pattern Recognition, Lecture Notes in Computer Science*, Vol. 301, J. Kittler, (ed.), Springer-Verlag, Berlin, 1988, pp 315-324.
- Wootton, J., Keller, J., Carpenter, C., Hobson, G., "A Multiple Hypothesis Rule-Based Automatic Target Recognizer", *4th International Conference on Pattern Recognition*, England, March 1988.
- Waldman, G., Wootton, J., Hobson, G., Luetkemeyer, K., "A Normalized Clutter Measure for Images", *Computer Vision, Graphics, and Image Processing*, Vol. 42, 1988, pp 137-156.
Reprinted in *Selected Papers on Performance Evaluation of Signal and Image Processing Systems*, SPIE Milestone Series, Vol. MS 79, 1993, pp 333-348.
- Keller, J., Hobson, G., Wootton, J., Nafarieh, A., Luetkemeyer, K., "Fuzzy Confidence Measures in Midlevel Vision", *IEEE Transactions, Systems, Man and Cybernetics*, Vol. SMC-17, No. 4, 1987, pp 676-683.
- Keller, J., Crownover, R., Wootton, J., Hobson, G., "Target Recognition Using the Karhunen-Loeve Transform", *Proceedings, IEEE International Conference on Systems, Man & Cybernetics*, November 1985, Tuscon, AZ, pp 310-314.
- Hobson, G., Luetkemeyer, K., Wootton, J., Keller, J., "The Use of Fuzzy Set Theory to Build Confidence Measures in Multisensor Imagery", *IEEE Applied Imagery Pattern Recognition Workshop*, October 1985, Baltimore, MD.
- Keller, J., Nafarieh, A., Wootton, J., Hobson, G., "Fuzzy Confidence Measures in Multitemporal Imagery", *IEEE Applied Imagery Pattern Recognition Workshop*, October 1985, Baltimore, MD.
- Emerging Trends in Intra Vehicle Networks for Data, Control and Power Distribution, 2010 Ground Vehicle Systems Engineering and Technology Symposium, August 17-19, 2010, Dearborn Michigan
- Vehicle Survivability with a Focus on Modern Armor Protection, Vehicle Survivability Conference 2009, June 2-4, 2009, Amsterdam Holland
- DIAGNOSTICS & PROGNOSTICS FOR A COLLECTIVE PROTECTION SHELTER SYSTEM, 2002 NBC Defense Collective Protection Conference, Orlando Florida
- ACOUSTIC NOISE IN COLPRO, 2002 NBC Defense Collective Protection Conference, Orlando Florida
- Detection of Traffic Anomalies Using Fuzzy Logic Based Techniques, Proceedings of the 1998 World Conference on Computational Intelligence, pp. 1176-1181, Anchorage Alaska
- Traffic Incident Detection: Sensors and Algorithms, *Mathl. Comput. Modeling*, Vol. 27, No. 9-11, pp. 257-291, 1998

- Neurocontrol: A Literature Survey, Mathl. Comput. Modeling, Vol. 23, No. 1-2, January. 1996, pp. 101-117
- Publication "Operations research and semantic control: Application to Advanced Traffic Management", International Transactions In Operations Research, Vol. 6, No. 1, 1999, pp. 5-20
- Publication "Traffic Incident Detection: Sensors and Algorithms", Mathl. Comput. Modeling, Vol. 27, No. 9-11, May-Jun. 1998, pp. 257-291
- Publication "Overview of the Special Issue", Mathl. Comput. Modeling, Vol. 27, No.9-11, May-Jun. 1998, pp. 1-8
- Editor Intelligent Transportation Systems - Traffic Sensing and Management, Mathl. Comput. Modeling, Vol. 27, No. 9-11, May-Jun. 1998, Pergamon Press
- Publication "Detection of Traffic Anomalies Using Fuzzy Logic Based Techniques", in Proc. Of FUZZ-IEEE '98, Anchorage, AK, May 4-9, 1998, pp. 1176-1181
- Publication "A Hierarchical Approach to Shortest-Path Problems in Vehicle Routing Problems", INFORMS Annual Meeting, Montreal, Quebec, April 26-29, 1998
- Publication "Operations Research in ITS - A Semantic Control Approach", International Transactions in Operations Research, 1997
- Publication "Highway Traffic Flow Prediction and Management via Radial Basis Function Neural Networks and Semantic Control", in Computer-Aided Civil and Infrastructure Engineering, 1997
- Publication "Traffic Flow Prediction by Radial Basis Function Neural Networks", in Proc. of Neural Network Applications in Highway and Vehicle
- Publication "Applications of Operations Research to ITS", presented at IFORS 4th Specialized Conference on Operations Research and Engineering Design, St. Louis, MO, Oct. 24-27, 1995
- Publication "ITS: A Brief Tutorial", presented at IFORS 4th Specialized Conference on Operations Research and Engineering Design, St. Louis, MO, Oct. 24-27, 1995
- Publication "Intelligent Transportation Systems - Enabling Technologies", Mathl. Comput. Modeling, Vol. 22, No. 4-7, Aug.-Oct. 1995, pp. 11-81
- Publication "Intelligent Transportation Systems: A Global Perspective", Mathl. Comput. Modeling, Vol. 22, No. 4-7, Aug.-Oct. 1995, pp. 259-268
- Publication "Network, Control, Communication and Computing Technologies for Intelligent Transportation Systems: Overview of the Special Issue", Mathl. Comput. Modeling, Vol. 22, No. 4-7, Aug.-Oct. 1995, pp. 1-10
- Editor Network, Control, Communication and Computing Technologies for Intelligent Transportation Systems, Mathl. Comput. Modeling, Vol. 22, No. 4-7, Aug.-Oct. 1995, Pergamon Press
- Publication "A Semantic Control Approach to Intelligent Transportation Systems", in Proc. of the IEEE Intelligent Vehicles Symposium 1995, Detroit, MI, Sep. 24-26, 1995
- Publication "EILS: A Directed-Search-Based Decision Aid for Battlefield Intelligence", in SPIE Proc. of the Applications of Artificial Intelligence V, Orlando, FL, May 18-20, 1987, Vol. 786, pp. 364-370
- Publication "An Emitter Identification and Localization System", in Proc. of the Conference on Applied Military Decision Aids & Support Systems: Technology, Engineering, & Opportunities, Fort Wayne, IN, Sep. 16-17, 1986, pp. IIC 1-22