

# BOB O'HARA

4321 E TAURUS PLACE, CHANDLER, AZ 85249, +1 408 218 4025, BOB@INFORMED-TECHNOLOGY.COM

## EXPERIENCE

2008 TO PRESENT Consulting Chandler, AZ

### INDEPENDENT CONSULTANT

- ) Expert witness consulting on 802.11 patent issues
- ) Expert witness consulting on standards development issues
- ) Technical advisor to startups Agito Networks (acquired by ShoreTel) and Aerohive Networks

2016 TO 2017 ProUnlimited Chandler, AZ

### NETWORK CONTROL SPECIALIST (CONSULTANT)

- ) Wireless Network Access Engineer at Facebook, Menlo Park, CA
- ) Responsible for Specifying protocol operation for Terragraph project

2001 TO 2008 Airespace (acquired by Cisco Systems) San Jose, CA

### CO-FOUNDER

- ) Successfully completed four rounds of venture funding, totaling \$55M from Storm Ventures, Norwest Venture Partners, Battery Ventures, Fidelity Investments, Hotung Capital Bank, and Korea Telecom Bank
- ) Introduced first centralized control system for wireless LANs, including complete system management platform, one year after closing first round of funding
- ) Developed 802.11 system architecture and directed development of 802.11 aspects of the system
- ) Developed and maintained both engineering and management level relationships with NEC, Nortel Networks, and Alcatel, OEM partners reselling Airespace equipment
- ) Influenced 3<sup>rd</sup> party 802.11 client vendors to adopt Airespace innovations outside of the 802.11 standard
- ) Drove adoption of Airespace and Cisco intellectual property in the 802.11 standard

1996 TO 2001 Informed Technology Santa Clara, CA

### PRESIDENT

- ) Operated consulting firm focused on helping clients develop strategies, push technologies, and drive consensus in various standardization arenas, including 802.11, Home Plug Alliance, and HomeRF
- ) Received IEEE Standards Medallion for contributions and leadership in 802.11 standards development
- ) Developed Media Access Control (MAC) protocol for selected in competition for Home Plug 1.0 standard
- ) Trained development engineering teams in the details of 802.11 protocol operation
- ) Clients include Intel, AMD, Boeing, Symbol Technologies (acquired by Motorola), Aironet (acquired by Cisco Systems), Harris Semiconductor, Intellon

1984 TO 1996 AMD Sunnyvale, CA

- ) **Senior Member of the Technical Staff:** developed 802.11 technology, contributed to 802.11 standard development, managed firmware development of first commercial 802.11 chipset
- ) **Manager of Product Planning and Applications:** managed a team of engineers developing next generation networking technology
- ) **Strategic Technical Manager:** managed field application engineers worldwide as they support IBM development labs, support IBM engineering directly in the Hudson Valley research labs
- ) **Field Application Engineer:** "remove any technical objection to a sale", provide training on AMD products, support customers' development engineers to find and fix hardware/software bugs

1980 TO 1984 Fairchild Space and Electronics Germantown, MD

### MEMBER OF THE TECHNICAL STAFF

- ) Developed first military solid state memory cartridge for rapid initialization of F-16 avionics systems
- ) Selected for initial class of Fairchild Scholars, a joint Fairchild-University of Maryland masters degree program, completed course work for MSEE

1979 TO 1980 TRW Defense and Space Systems Group McLean, VA

**MEMBER OF THE TECHNICAL STAFF**

- ) Hardware and software development on top secret compartmented project for acoustic signal processing

**EDUCATION**

1982 TO 1984 University of Maryland College Park, MD  
**FAIRCHILD SCHOLARS PROGRAM (COOPERATIVE MSEE PROGRAM) COMPLETED COURSEWORK FOR MSEE**

1974 TO 1978 University of Maryland College Park, MD  
**BS ELECTRICAL ENGINEERING VIA THE COOPERATIVE ENGINEERING PROGRAM**

**STANDARDS DEVELOPMENT**

- ) IEEE 802.11-1997 Wireless LAN MAC and PHY Standard: Technical editor
- ) IEEE 802.11-1999 Wireless LAN MAC and PHY Standard: Task group chair and technical editor
- ) IEEE 802.11d-2001 Operation in additional regulatory domains: Task group chair and technical editor
- ) IEEE 802.11F-2003 Recommended Practice for multi-vendor access point interoperability: Technical editor
- ) IEEE 802.11-2007 Wireless LAN MAC and PHY Standard: Task group chair
- ) IEEE 802 Executive Committee 2001-2008
- ) HomePlug Alliance Powerline Network Standard 1.0: Technical contributor

**PUBLICATIONS**

*IEEE 802.11 Handbook: A Designer's Companion*, co-author with Al Petrick, published by the IEEE Standards Information Network, first edition 1999, second edition 2005

*Gigabit Ethernet*, contributor, published by McGraw-Hill, 1998

"Wireless Wizards" column, contributor, Network World, 2002-2004

**EXPERT OPINIONS AND DECLARATIONS**

Declaration of Robert O'Hara, November 22, 2002, Chrimar Systems v. Cisco, 01-cv-71113, U.S. District Court for the Eastern District of Michigan

Expert Witness Report of Robert O'Hara, May 6, 2011, In The Matter Of Certain Wireless Communication Devices, Portable Music And Data Processing Devices, Computers And Components Thereof, Investigation No. 337-TA-745, U.S. International Trade Commission

Expert Report of Robert O'Hara Regarding the Policies of Standard Setting Organizations, September 15, 2011, Case No. 10-CV-662 (BBC), United States District Court For The Western District Of Wisconsin, Apple, Inc. and NeXT Software, Inc. v. Motorola, Inc and Motorola Mobility Inc.

Witness Statement of Robert O'Hara, November 18, 2011, In The Matter Of Certain Wireless Communication Devices, Portable Music And Data Processing Devices, Computers And Components Thereof, Investigation No. 337-TA-745, U.S. International Trade Commission

Expert Report of Bob O'Hara, May 29, 2013, Case Number C-10-1823JLR, United States District Court in the Western District of Washington at Seattle, Microsoft Corporation v Motorola Inc., et al

Declaration of Robert O'Hara, March 11, 2014, Samsung Electronics Co. Ltd, et al; Petitioner v. Rembrandt Wireless Technologies, LP; Patent Owner, Case Numbers IPR2014-00514, IPR2014-00515, IPR2014-00889, IPR2014-00890, IPR2014-00891, Before the Patent Trial and Appeal Board

Declaration of Robert O'Hara, March 11, 2014, Rembrandt Wireless Technologies, LP v. Samsung Electronics Co. Ltd., et al, 13-cv-213, U.S. District Court for the Eastern District of Texas

Expert Report of Robert O'Hara Regarding Standard Setting Organizations, Case Number 6:12-cv-578 (LED), United States District Court for the Eastern District of Texas Tyler Division, Commonwealth Scientific and Research Organization v Mediatek Inc., et al

Declaration of Robert O'Hara, February 26, 2015, Ericsson Inc. and Telefonaktiebolaget LM Ericsson v Intellectual Ventures II LLC, Case IPR2014-01185, Patent 7,269,127, United States Patent and Trademark Office, Patent Trial and Appeals Board

## TESTIMONY AT TRIAL

Commil USA, LLC v. Cisco Systems, Inc., fact witness, 2:11-cv-265, U.S. District Court for the Eastern District of Texas

Commil USA, LLC v. Cisco Systems, Inc., fact witness, 2:07-cv-341, U.S. District Court for the Eastern District of Texas

## PATENTS

- J US Patent 5483566 – Method and Apparatus for Modifying the Contents of a Register Via a Command Bit
- J US Patent 6766453 – Authenticated Diffie-Hellman Key Agreement Protocol where the Communicating Parties Share a Secret Key with a Third Party
- J US Patent 6920559 – Using a Key Lease in a Secondary Authentication Protocol after a Primary Authentication Protocol has been Performed
- J US Patent 6965942 – Method and System for Improving Throughput Over Wireless LANs with a Dynamic Contention Window
- J US Patent 6990116 – Method and System for Improving Throughput Over Wireless LANs with Mode Switching
- J US Patent 7024690 – Protected Mutual Authentication over an Unprotected Channel
- J US Patent 7212837 – Hierarchical Protocol Processing
- J US Patent 7301926 – Automatic Coverage Hole Detection
- J US Patent 7302256 – Viral Configuration of APs
- J US Patent 7327697 – Method and System for Dynamically Assigning Channels Across Multiple Radios in a Wireless LAN
- J US Patent 7336670 – Discovery of Rogue AP Location in Wireless Network Environments
- J US Patent 7340247 – Wireless Infrastructure included Wireless Communication and Discovery Mechanism
- J US Patent 7346338 – Wireless Network System with Integrated Rogue AP Detection
- J US Patent 7453840 – Containment of Rogue Systems in Wireless Networks Environments
- J US Patent 7535884 – Battery-efficient Generic Advertising Service for Wireless Mobile Devices
- J US Patent 7539169 – Directed Association Mechanism in Wireless Network Environments
- J US Patent 7593356 – Method and system for dynamically assigning channels across multiple access elements in a wireless LAN
- J US Patent 7596376 – Methods, apparatuses and systems facilitating client handoffs in wireless network systems
- J US Patent 7602746 – Method for optimized layer 2 roaming and policy enforcement in a wireless environment
- J US Patent 7660318 – Internetworking support between a LAN and a wireless mesh network
- J US Patent 7672459 – Key distribution and caching mechanism to facilitate client handoffs in wireless network systems
- J US Patent 7747740 – Troubleshooting of wireless client connectivity problems in a wireless network
- J US Patent 7765256 – Diagnostic functionality for wireless client connectivity problems in wireless networks
- J US Patent 7787361 – Hybrid distance vector protocol for wireless mesh networks
- J US Patent 7809354 – Detecting address spoofing in wireless network environments
- J US Patent 7839856 – Centrally controlled routing with tagged packet forwarding in a wireless mesh network
- J US Patent 7843817 – Congestion control in wireless mesh networks
- J US Patent 7882349 – Insider attack defense for network client validation of network management frames
- J US Patent 7912023 – Battery-efficient generic advertising service for wireless mobile devices
- J US Patent 7917146 – Methods, apparatuses and systems facilitating client handoffs in wireless network systems
- J US Patent 7944886 – Infrastructure-based enabling for dynamic frequency selection in wireless networks
- J US Patent 7966489 – Method and apparatus for selecting an appropriate authentication method on a client
- J US Patent 8000308 – Containment of rogue systems in wireless network environments
- J US Patent 8023482 – Dynamic rate limiting in wireless mesh networks
- J US Patent 8040835 – Troubleshooting link and protocol in a wireless network
- J US Patent 8040861 – Method and system for hierarchical processing of protocol information in a wireless LAN
- J US Patent 8085710 – Minimizing packet loss during fast roaming
- J US Patent 8089974 – Discovery of rogue access point location in wireless network environments
- J US Patent 8254882 – Intrusion prevention system for wireless networks

- J US Patent 8488524 – Method and system for dynamically assigning channels across multiple radios in a wireless LAN
- J US Patent 8509726 – Troubleshooting link and protocol in a wireless network
- J US Patent 8559306 – End-to-end packet aggregation in mesh networks
- J US Patent 8713626 – Network client validation of network management frames
- J US Patent 8774077 – Bridging wireless and wired media in a computer network
- J US Patent 8879455 – Power management for multicast frames in wireless networks
- J US Patent 9185714 – Method and system for dynamically assigning channels across multiple radios in a wireless LAN
- J US Patent 9226167 – Troubleshooting link and protocol in a wireless network