

Exhibit 1003

Curriculum Vitae of **Dr. William T. Ralston**

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Summary

Dr. Ralston has enjoyed over 40 years in wireless technology. His interest in wireless started as a “ham” radio operator in late high school, continued throughout his career, and culminated in his current executive role at an award-winning global telecommunications company. His career has included designing communications systems in multiple industries (satellite, Military, remote sensing, cellular, mobile, Internet), working with and developing multiple telecommunications standards, inventing, leading teams, teaching, and learning. Seeking new challenges, Dr. Ralston returned to school to earn his law degree after which he began to integrate his technical expertise with a patent-focused legal career. As Chief IP Counsel for ViaSat, Dr. Ralston oversees innovation across all of ViaSat’s business which spans Internet services, satellites, wireless systems, antennas, radio frequency electronics, networking protocols, semiconductors, and software.

Education

University of Utah, S.J Quinney College of Law, Juris Doctor, 2005

- Order of the Coif, Law Review, Merit Scholarship
- Outstanding Achievement Awards (Property, Business Organizations)
- CALI Excellence for the Future Award (Torts, Copyright, Trademark, Medieval English Law, International IP)
- National 1st place, ASCAP Nathan Burkan Memorial Paper Competition

University of Massachusetts - Lowell, Doctor of Engineering in Electrical Engineering, 1993

- Concentration in Communications Systems; Minor in Business
- Awarded outstanding electrical engineering graduate student for 1992
- Dissertation: Application of Spread-Spectrum Multiple-Access to High-Density Fixed and Mobile Meteor Burst Communication Networks

University of Southern California, Master of Science in Electrical Engineering, 1984

- Concentration in Communications Analysis

Massachusetts Institute of Technology, Bachelor of Science in Electrical Engineering, 1982

- Eta Kappa Nu Electrical Engineering Honor Society
- Thesis: A Microcomputer Controlled Sequencer for the Minimoog Synthesizer

Teaching Experience

Telecommunications Research Associates (TRA) - St Marys, KS, Instructor 2000-2002

- Taught industry training courses in the wireless communications curriculum (Third Generation (3G) Mobile Communications, IEEE 802.11, Code Division Multiple Access, Broadband Wireless Access)
- Developed two-day course in Broadband Wireless Access

University of Massachusetts - Lowell, MA, Substitute Lecturer 1990-1993

- Lectured to graduate (random processes, communications theory) and undergraduate (signals and systems) classes

Orange Coast Community College, Costa Mesa, CA, Adjunct Faculty 1986

- Taught core undergraduate course in Passive Circuit Analysis

Engineering & Management Experience*Independent Consultant, Salt Lake City, UT 10/00-8/02*

- Developed and taught technology training courses for *Telecommunications Research Associates*
- Patent searching & technical analysis
- Represented *L-3 Communications* on IEEE 802.16 WiMax standard working group
- Prepared technical recommendations applying commercial wireless standards to military applications

L-3 Communications Systems West, Salt Lake City, UT 1/98-10/00

- Project engineer for airborne wireless Internet terminal (*Connexion* by *Boeing*); led team of 25 engineers
- Chief scientist for satellite cellular development program (*Ellipso*); designed and analyzed waveform and defined adaptation of GSM cellular protocol stack
- Technical lead for resolution of IP issues (interfacing with outside legal counsel)

Tellabs Wireless/Steinbrecher, Burlington, MA, Engineering Manager 3/95-12/97

- Built and supervised department of 15 hardware and software developers; mentoring, training, interdepartmental coordination, project scheduling, hiring, and reviews
- Managed development of digital hardware, DSP software and ASICs for multi-mode cellular base station; managed DSP modem development subcontract (to *Delphi Communications Systems*)
- Supported *Universal Wireless Communications Consortium* (UWCC) marketing activities to promote international acceptance of US-TDMA (IS-54) cellular standard
- Invented DSP software enhancements for cellular digital packet data (CDPD) base station providing four-fold performance improvement for fielded equipment
- Cited as key contributor and inventor

MITRE Corporation, Bedford, MA, Technical Staff 10/89-3/92, Lead Engineer 3/92-3/95

- Contributor to SHF demand assignment multiple access (DAMA) standard (MIL-STD-188-183)
- Proof of concept technology development; technical review of contractor proposals; technical support to Air Force contract management (MILSTAR).
- Citations: Project Achievement Award, 1994
Director's Distinguished Accomplishment Award, 1992
Admission to competitive advanced degree scholarship program, 1990

Hollis International Limited, Hollis, NH, VP Engineering 10/87-9/89

- Principal in high-technology start-up to develop and internationally market (Africa and Middle East) turnkey hydrological/meteorological data collection system
- Developed meteor scatter communications equipment including QPSK modem
- Managed all engineering development, field service, engineering services subcontracts, supply chain

Signatron, Lexington, MA, Engineering Specialist 1/86-10/87

- Analyzed communications systems (satellite, troposcatter, meteor scatter)
- Contributed to marketing efforts resulting in several small study subcontracts
- Principal proposal author and investigator in NASA funded study of 30/20 GHz satellite communication system

Rockwell International, Santa Ana, CA, Intern 79-81, Member of Technical Staff 7/82-1/86

- Design of Air Force MILSTAR UHF terminal and architect of UHF modem
- Led team of 5 staff developing operational DSP firmware for several modems
- Analyzed satellite systems (antenna pointing, earth surface footprints, link budgets, high-level subsystem design)
- Assembly and debugging of microprocessor systems
- Design of radio frequency PLL circuitry

Legal Experience

GroGuru, San Diego, CA IP Advisor 6/11-present

- Patent searching and competitive analysis for early stage startup in internet-of-things (IOT)

ViaSat Inc., Carlsbad, CA Chief IP Counsel 6/11-present

- Responsible for corporate-wide IP strategy (IP protection, IP risk management, IP litigation support)
- Management of patent portfolio (over 900 active matters across 33 jurisdictions)
- Built and lead in-house IP department (4 direct reports)

Kirton & McConkie, Salt Lake City, UT Senior Associate 10/07-1/11; Shareholder 1/11-6/11

- Managed patent portfolio for large wireless company
- Prosecuted U.S. and foreign patents (semiconductors, wireless, internet, software)
- Resolved patent and trademark disputes (infringement litigation and *inter-partes* reexaminations)
- Advised clients on intellectual property issues

Thorpe, North & Western, Sandy, UT Clerk 3/03-2/04; Patent Agent 2/04-10/05; Associate 10/05-10/07

- Drafted and prosecuted electrical (wireless, semiconductors, audio/video), software, optical, mechanical, medical device & business methods patents
- Prepared opinions on patentability, validity, infringement
- Researched trade secret, design patents, and patentability to support litigation
- Developed new clients

Editorial and Review Activities

- Editorial Board, *AIPLA Journal*, 2015-present (term expires 2018)
- Advisory Committee, *IPMI Law & Management Institute Conference*, 2014-2017
- Staff, *Utah Law Review*, 2003-2004
- Session Chair, "Satellite Applications," *IEEE Military Communications Conference*, 1994
- Technical Review Committee, *International Conference on Signal Processing Applications & Technology*, 1994
- Reviewer for *IEEE Transactions on Communications*, 1992-1993
- Editor, *ZeroBeat* newsletter, 1983-1985

Publications

Legal Journals

"Foreign Equivalents to the U.S. Doctrine of Equivalents: We're Playing in the Same Key But It's Not Quite Harmony," 6 *Chi.-Kent J. Intell. Prop.* 177 (2007)

"Copyright in Computer-Composed Music: HAL meets Handel," 52 *J. Copyright Soc'y USA* 281 (2005)

"Recent Legislative Developments: DUI Plea Restrictions," 2004 *Utah L. Rev.* 284

Technical Journals

"Spread Spectrum Multiple Access for Mobile Meteor Burst Communications," *IEEE Transactions on Vehicular Technology*, March 1995 (with J. Weitzen)

"Distribution of Underdense Meteor Trail Duration and Duty Cycle and Applications to Meteor Scatter Communication System Design," *Radio Science*, September-October 1993 (with J. Weitzen, J. Ostergaard)

"Meteor Scatter: An Overview," *IEEE Transactions on Antennas and Propagation*, December 1988 (with J. Weitzen)

Other

"Orbital Calculations by Pocket Calculator Part II," *AMSAT Newsletter*, March 1978

"Light Variability of BY Draconis in B and V," *University of Iowa Abbreviated Reports by Research Participants in Student-Oriented Programs*, Summer 1977

Technical Presentations

"Contest University," presented to the *Utah DX Association*, October, 2010

"Putting Up A Radio Tower," presented to the *West Desert Amateur Radio Club*, June 2003

"Amateur Radio Satellites," presented to the *Utah Amateur Radio Club*, September 2001

"How Tall Should My Tower Be? An Exercise in HF Propagation Angles, Terrain Modeling and Antenna Height Optimization," presented to the *Salt Peaks Amateur Radio Club*, May 2000

"DSP and Software Radios," presented to the *IEEE Boston-Section Communications Chapter*, February 1996

"Service Overlays on North American Standard Cellular," *Proceedings of the SPIE International Society for Optical Engineering*, October 1996

"Direct Sequence CDMA for Large Meteor Burst Networks," *IEEE Military Communications Conference*, October 1993

"High Speed FIR Filtering Using Low Speed FIR Filter Chips," *International Conference on Signal Processing Applications and Technology*, November 1992

"Application of the Texas Instruments TMS320C40 in Satellite Modem Technology," *International Conference on Signal Processing Applications and Technology*, November 1992. (with P. Siy)

"Network Waiting Time for Meteor-Burst Communications," *IEEE Military Communications Conference*, October 1992

"Performance of Meteor Scatter Systems Using Code Division Multiple Access," *IEEE Military Communications Conference*, November 1991

Legal Presentations/Panels

"IP for Startups," presented to *Evonexus* (San Diego Tech Startup Incubator), July 2017

"Leveraging Big Data for a Winning IP Strategy," panelist at *Consero Global IP Management Forum*, June 2017

"The 3 Pillars of IP strategy: Patent Prosecution, Portfolio Management & Due Diligence," panelist at *Centerforce IP Strategy Summit*, June 2016

"Perspectives on How to Maximize the Role of Leaders in IP," panelist at *IPMI Law & Management Institute*, November 2015

"Ensuring the Protection of Your IP Portfolio," presentation to the *Marcus Evans IP Law Executive Roundtable*, November 2015

"Analyzing the Importance of the Supreme Court's Most Recent Rulings on IP Law," panelist at *IPMI Law & Management Institute*, November, 2014

"Adapting to the America Invents Act and Its Real World Implications," panelist at *IPMI IP Law & Management Institute*, November, 2013

"Strategic Decision Making in Our New First-to-File System - An In-House Perspective," panelist at *AIPLA Electronic & Computer Patent Law Summit*, April, 2012

"Selecting a Strong Trademark and Using It Properly," presented to the *Utah Bar Summer Convention*, July, 2011

Patents/Patent Applications

U.S. Patent Application (serial number & title confidential until published), expected publication for public viewing April, 2018, co-inventors: (confidential until published)

U.S. Patent No. 6,190,760, "Non-recursively generated orthogonal PN codes for variable rate CDMA," July 2000 (co-inventors: Thomas R Giallorenzi, Samuel C Kingston, Lee A Butterfield, Leon L Nieczyporowicz, Alan E Lundquist)

U.S. Patent No. 5,719,860, "Wideband bus for wireless base station," February 1998 (co-inventors: Thierry Maison, Ronald A. Haberkorn, John C. Carrick, Robert E. Snyder, Michael A. Wolf)

U.S. Patent No. 5,894,474, "Wideband bus for wireless base station," April 1999 (co-inventors: Thierry Maison, Ronald A. Haberkorn, John C. Carrick, Robert E. Snyder, Michael A. Wolf)

General Information

- Admitted: *California State Bar* (2013), *Utah State Bar* (2005), *US Patent and Trademark Office* (2004)
- Utah "Legal Elite" (Intellectual Property) 2011, Utah Business "Up and Coming" 2011
- Member: *IEEE*, *ARRL*, *AMSAT*, *AIPLA*
- Invited participant in IEEE Wireless Technology Exchange Mission to China 2000
- Federally licensed Amateur Radio Operator N7VM
designed and installed 100-foot radio tower with multiple antennas
- Volunteer judge for mock trials and engineering/science fairs (Salt Lake Valley Science and Engineering Fair 2005-2006; Weber State Mock Trials 2003)
- Founder, Corporate Secretary & Director, *Contraburners*, a 501(c)(3) non-profit to support Contra Dance (an American Folk Dance form) 2015-2016
- Hobbies: dancing, gardening, ham radio, music, travel