Jonathan Wells, Ph.D., M.B.A.

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Wireless Communications Expertise

- Cellular Networks (2G, 3G, 4G, GSM, GPRS, EDGE, UMTS, WCDMA, HSPA, HSDPA, HPSA+, LTE and LTE-Advanced)
- Cellular Infrastructure Equipment (Base Stations, Backhaul and Handsets)
- Radio Frequency (RF), Microwave and MM-Wave Devices, Systems and Networks
- RF Design, including RF Assemblies, Subassemblies and Components
- Wireless Standards, Rules and Regulations (3GPP, 3GPP2, FCC, ETSI, CEPT)
- Intellectual Property, Patent
 Infringement and Litigation Support

Professional Summary

Dr. Wells has over 25 years of wireless communications experience gained from working in three continents. He is currently an independent consultant providing expertise on cellular technologies, wireless devices, network infrastructure and wireless rules and regulations to a client base of attorneys, intellectual property organizations, investment and research institutions, public listed and private companies. Dr. Wells has over 40 academic and commercial publications and presentations, and is lead inventor on several patents. He is Senior Member of the IEEE and is author of "Multi-Gigabit Microwave and Millimeter-Wave Wireless Communications," Artech House, 2010.

Employment History

2007 to present AJIS Consulting, Pleasanton, CA Independent Consultant

Provide independent technical consulting on wireless communications and emerging wireless fields.

- Expert witness and expert consulting support of 2G, 3G and 4G wireless patent litigation.
- Analysis of cellular and mobile wireless patents and infringing equipment.
- Cellular backhaul and wireless technology technical and industry analysis for analysts, investment and research institutions. Research and publication of analyst reports.
- Wireless product development and marketing strategies.
- Specialized technical workshops on various wireless technologies; including cellular networks, mm-wave radios, security sensors and short range radios.
- Specialized global regulatory tasks and product approvals.

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2005 to 2007 GigaBeam Corporation, Herdon, VA

Director Product Management and Global Regulatory Affairs

Responsible for product strategy for industry-transforming high data rate wireless product.

- Initiated market development in over 40 countries including in Europe, Canada, Caribbean, Latin America, Middle East and Asia.
- Participated and drove standard development in FCC, CEPT and ETSI technical meetings.

2000 to 2004 Stratex Networks (now Aviat Networks), San Jose, CA

Director Product Development

Responsible for global product development of high-end digital microwave radios primarily for cellular backhaul applications.

- Led RF/microwave development team of 35 engineers based in two continents.
- Technical leadership of flagship Eclipse product, shipping over 250,000 units.
- Technical management of overseas manufacturing subcontractors.

1998 to 2000 Adaptive Broadband (now GE Digital Energy), Rochester, NY

1999-2000: Director Wideband Products, 1998-9: Engineering Group Leader

Full responsibility for the Terrestrial Infrastructure Group, providing telecommunications products for cellular and private network applications.

- P&L responsibility for \$4M wireless division.
- Responsible for the development of a family of digital radios and associated switching / multiplexing equipment.

1994 to 1998 MAS Technology (now Aviat Networks), Wellington, New Zealand

1995-98: RF Group Manager, 1994-95: Senior RF Design Engineer

Responsible for RF hardware development for cellular and telecommunications applications.

- Developed three generations of wireless transmission, switching and multiplexing products.
- Design and sustaining responsibility for satellite ground station terminals.
- Responsible for company's European regulatory approvals.

1993 to 1994 Matra Marconi Space, Portsmouth, UK Senior Design Engineer

- Developed GaAs MMIC mixer and MIC transmitter board for two satellite payloads.
- Theoretical analysis and modeling of low noise VCOs.

1990 to 1992 University of Bath, Bath, UK Post Doctoral Research Officer

- Fabricated novel quantum amplifiers in clean room environment.
- Developed computer models to predict semiconductor device performance.

1987 to 1990 British Aerospace, Filton, Bristol, UK Engineer (part time)

Designed and fabricated novel mixer devices, to support PhD research.

1985 to 1986 Plessey Research, Caswell, UK Engineer (1 year placement)

Developed high speed fiber optic transmitter / receiver devices.

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Education

Year	<u>College/University</u>	<u>Degree / Certification</u>
2004	AeA/Stanford Executive Institute,	Graduated from 10-day, full-time executive
	Stanford University, CA, USA	management course
1998	Massey University, New Zealand	M.B.A. (Graduated top 10% of class with
		Distinction)
1991	University of Bath, United Kingdom	Ph.D., Microwave Physics (Sponsored by
		British Aerospace)
1987	University of Bath, United Kingdom	B.Sc., Physics with Physical Electronics
	· ·	(Graduated 3 rd in class with 1 st Class Honors)

Expert Witness Experience

July 2015 to Present	Ericsson v. <u>Intellectual Ventures</u> , IPR2015-01367 Case: <u>Inter Partes Review</u> of a wireless communication patent. Role: Technical expert for patent owner.
July 2015 to Present	Core Wireless v. LG et. al. (inc. <u>Google</u>), 2:14-cv-911 and 912 Case: Patent infringement case related to cellular location. Role: Testifying expert for defendant.
May 2015 to Present	Adaptix v. Ericsson et al, 6:14-cv-0501, 0502 and 0503, 6:15-cv-0042 Case: Patent infringement case related to four 4G/LTE communication patents. Role: Testifying expert for plaintiff.
May 2015 to Present	Adaptix v. Alcatel-Lucent et al, 6:15-cv-0041 Case: Patent infringement case related to four 4G/LTE communication patents. Role: Testifying expert for plaintiff.
April 2015 to present	Ericsson v. <u>Apple</u> , ITC Inv. No. 337-TA-952 Case: ITC hearing related to two wireless patents. Role: Testifying expert for respondent. Provided two expert reports. Deposed.
April 2015 to present	Ericsson v. <u>Apple</u> , 2-15-cv-00293 Case: Patent infringement case related to two wireless patents. Role: Testifying expert for defendant.
Dec 2014 to present	Ericsson v. <u>Huawei</u> , ICDR Case No. 01-14-0002-2610 Case: International Center for Dispute Resolution arbitration regarding licensing of patent portfolio. Role: Technical expert for respondent. Provided two expert reports.

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Dec 2014 to Sept 2015	Ericsson v. <u>Intellectual Ventures</u> , IPR2014-01471 Case: <u>Inter Partes Review</u> of a wireless communication patent. Role: Technical expert for patent owner. Provided declaration. Deposed.
Dec 2014 to Sept 2015	Ericsson v. <u>Intellectual Ventures</u> , IPR2014-01412 Case: <u>Inter Partes Review</u> of a wireless communication patent. Role: Technical expert for patent owner. Provided declaration. Deposed.
Nov 2014 to May 2015	Samsung v. Nokia, ICC Case No. 19602/AGF/RD Case: International Chamber of Commerce arbitration regarding licensing of patent portfolio. Role: Testifying expert for claimant. Provided expert report. Testified at hearing.
Nov 2014 to Present	<u>Regents of the University of Minnesota</u> v. AT&T et al, 0:14-cv-4666 Case: Patent infringement case related to two LTE communication patents. Role: Consulting expert for plaintiff.
Oct 2014 to Aug 2015	Ericsson v. <u>Intellectual Ventures</u> , IPR2014-01330 Case: <u>Inter Partes Review</u> of a wireless communication patent. Role: Technical expert for patent owner. Provided declaration. Deposed.
Sept 2014 to May 2015	Ericsson v. <u>Intellectual Ventures</u> , IPR2014-00963 Case: <u>Inter Partes Review</u> of a wireless communication patent. Role: Technical expert for patent owner. Provided declaration. Deposed.
Sept 2014 to Oct 2014	Ericsson v. <u>TCL Communication Technology Holdings</u> , 2:14-cv-677 Case: Patent infringement case related to a cellular LTE communication patent. Role: Consulting expert for defendant.
Sept 2014 to Sept 2014	Ericsson v. <u>Intellectual Ventures</u> , IPR2014-00958 Case: <u>Inter Partes Review</u> of a wireless communication patent. Role: Technical expert for patent owner.
Jan 2014 to Aug 2014	<u>Cell and Network Selection</u> v. AT&T et al, 6:13-cv-00403-LED-KNM Case: Patent infringement case related to a 4G/LTE communication patent. Role: Testifying expert for plaintiff.
Jan 2014 to Jan 2015	<u>Cell and Network Selection</u> v. MetroPCS et al, 6:13-cv-00404-LED-KNM Case: Patent infringement case related to a 4G/LTE communication patent. Role: Testifying expert for plaintiff. Provided two Expert Reports. Deposed.
Jan 2014 to Present	Adaptix v. Ericsson et al, 6:12-cv-00049, 00050 and 00369 Case: Patent infringement case related to five 4G/LTE communication patents. Role: Testifying expert for plaintiff. Provided two Expert Reports. Deposed.

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Jan 2014 to Present	<u>Adaptix</u> v. Alcatel-Lucent et al, 6:12-cv-00022, 00122 and 00123 Case: Patent infringement case related to five 4G/LTE communication patents. Role: Testifying expert for plaintiff. Provided two Expert Reports. Deposed.
Oct 2013 to Jan 2014	Ericsson v. <u>Samsung</u> , 6:12-cv-895 Case: Patent infringement case related to 13 wireless communication patents. Role: Testifying expert for defendant.
Oct 2013 to Jan 2014	Ericsson v. <u>Samsung</u> , 6:12-cv-894 Case: Patent infringement case related to 11 wireless communication patents. Role: Testifying expert for defendant.
June 2013 to Dec 2013	Adaptix v. Ericsson, ITC Inv. No. 337-TA-871 Case: ITC hearing related to 4G/LTE wireless communication patent. Role: Testifying expert for complainant. Provided Expert Report and Witness Statement. Deposed.
Mar 2013 to Sept 2014	<u>Mobile Telecommunication Technologies</u> v. BlackBerry, 3:12-CV-1652-M Case: Patent infringement case related to five wireless communications patents. Role: Consulting expert for plaintiff.
Mar 2013 to Dec 2013	<u>Mobile Telecommunication Technologies</u> v. Sprint, 2:12-cv-832-JRG-RSP Case: Patent infringement case related to five wireless communications patents. Role: Consulting expert for plaintiff.
Jan 2013 to May 2014	TracBeam v. <u>Google</u> , 6:13-cv-93-LED (severed from <i>TracBeam v. AT&T et al</i> , 6:11-cv-00096) Case: Patent infringement case related to two cellphone location patents. Role: Testifying expert for defendant. Provided Expert Report. Deposed.
Jan 2013 to Sept 2013	<i>Ericsson v. Samsung</i> , ITC Inv. No. 337-TA-862 Case: ITC hearing related to seven 2G, 3G, 4G/LTE and Wi-Fi patents. Role: Testifying expert for respondent. Provided two Expert Reports and two Witness Statements. Deposed. Testified at hearing.
Jan 2013 to June 2013	EON v. AT&T et al, 3:11-cv-01555-FAB Case: Patent infringement case related to wireless communications patent. Role: Consulting expert for plaintiff.
Nov 2012 to Oct 2013	Cormany et. al. v. <u>Fireman's Fund Insurance Company</u> , CIVDS1100146 Case: Breach of contract case involving location via cell phone. Role: Testifying expert for plaintiff. Provided technical analyses. Deposed.
Oct 2012 to Dec 2012	Drivertech v. <u>R+L Carriers</u> , 2:08-cv-00862 Case: Patent infringement case related to wireless communications patent. Role: Consulting expert for defendant. Provided technical analyses.

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