

**Branimir Vojcic**  
**CURRICULUM VITAE**

President  
Xplore Wireless LLC  
9610 Savannah Crossing Ct  
Vienna, VA 22182

CEO and CTO at LN2 DB, LLC  
Partner at Fowler Radio Group, LLC.

**Education**

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**Doctor of Science Degree in Electrical Engineering (1989)**

Thesis: "Performance of a class of digital transmission schemes in a fading dispersive channel with jamming", Faculty of Electrical Engineering, University of Belgrade, Yugoslavia.

**Graduate Studies in Communications (1986/1987)**

One year program, The George Washington University, Washington, DC.

**Master of Science Degree in Electrical Engineering (1986)**

Thesis: "Some possibilities of the ionospheric index of solar activity  $R_{12}$  prediction from the point of view of long term ionospheric radio wave propagation conditions prediction", Faculty of Electrical Engineering, University of Belgrade, Yugoslavia.

**Dipl. Eng Degree in Electrical Engineering (1980)**

Five year program, Faculty of Electrical Engineering, University of Belgrade, Yugoslavia.

**Experience**

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**Academic Experience:**

**George Washington University (from 2000 to 2015)**, Professor in the Department of Electrical and Computer Engineering (now an Emeritus Professor)

**George Washington University (from 2001 to 2004)**, Chairman, Department of Electrical and Computer Engineering.

**George Washington University (from 1997 to 2000)**, Associate Professor in the Department of Electrical Engineering and Computer Science.

**Technology Consulting:**

CTA Incorporated (Orbital Sciences Corp.)  
Delphi Communications  
TerreStar Networks, Inc.  
Federal Communication Commission  
Hughes Network Systems  
iBiquity Digital  
LCC International  
Lucent Technologies

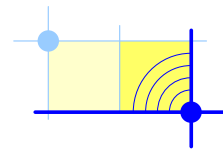
**George Washington University (from 1991 to 1997)**, Assistant Professor in the Department of Electrical Engineering and Computer Science.

**University of Belgrade (from 1988 to 1991)**, Research Associate (part time)

**Industry and Government Experience:**

**Ministry of Defense, Yugoslavia (from 1981 to 1991)**, including leave of absence for studying), Research engineer

Lockheed Martin  
Motorola,  
Novel  
Orbcom  
RKF Engineering  
Sirius Satellite  
Telecommunications Associates  
Critical Alert



TV Answer  
XtremeSpectrum

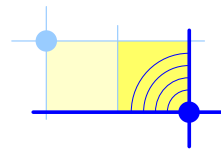
**Business and Legal Consulting:**

Finnegan, Henderson, Farabow, Garrett  
&Dunner LLP  
Hogan & Hartson LLP,  
KSI Inc, and Antton & Associates  
Bechtel Telecom  
Wilson, Sonsini, Goodrich, and Rosati

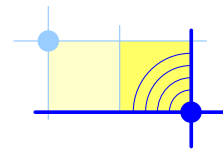
Wilmer Hale  
King & Spalding  
Ropes & Gray  
Kirkland & Ellis  
Latham & Watkins  
Dovel & Lunner  
Munger, Tolles & Olson  
Mayer Brown  
Dechert

**Expert Witness Experience:**

1. Expert for Finnegan (for Interdigital) in ITC case Interdigital vs Samsung, 2008 (testified in deposition and in trial)
2. Expert for Finnegan (for Interdigital) in ITC case Interdigital vs Nokia, 2009 (testified in deposition and in trial)
3. Expert for Finnegan (for WiAV) in WiAV versus Nokia, Motorola and Sony-Ericsson, Souther District of California, 2011 (testified in deposition, settled)
4. Expert for McCarter & English (GoldenBridge Technology Inc) in GoldenBridge Technology Inc versus Apple, District of Delaware 2013 (testified in deposition)
5. Expert for Finnegan (for SPH) in SPH vs Nokia, Motorola, Sony-Ericsson et. al., Southern District of California 2012 (testified in deposition, settled)
6. Expert for Finnegan (for Creative Kingdom) in Creative Kingdom vs Nintendo, ITC, 2012 (testified in deposition and in trial)
7. Expert for Finnegan (for Linex) in Linex vs Apple, HP, Aruba Networks, Meru Networks, Ruckus Wireless, ITC, 2012 (testified in deposition)
8. Expert for Finnegan (for HTC) in HTC vs Apple, ITC, 2012 (testified in deposition and in trial)
9. Expert for Finnegan (for Realtek) in LSI vs Realtek 2013, ITC (testified in deposition and in trial)
10. Expert for McCool, Smith & Hennigan (for GoldenBridge Technology Inc) in GBT vs Apple in 2014, Norther District of California (testified in deposition and trial)
11. Expert for Wilson Sonsini (for Interdigital) in ITC 337-TA-868 Investigations, in Interdigital vs Samsung, Huawei, Nokia and ZTE, ITC, 2014 (testified in deposition)
12. Expert for Reed & Scardino (for Mobile Telecommunications Technologies LLC) in Civil Action No. 2:12-cv-308-JRG, Eastern District of Texas, in Mobile Telecommunications Technologies LLC vs Clearwire Corporation, 2014 (testified in deposition, settled)
13. Expert for Reed & Scardino (for Mobile Telecommunications Technologies LLC) in Civil Action in Eastern District of Texas, Mobile Telecommunications Technologies LLC vs SprintNextel Corp, Samsung Telecommunications America, LLC and Apple, Inc, Case No. 2:13-cv-258-JRG-RSP, 2014 (settled).
14. Expert Witness for Wilson Sonsini (for Interdigital), in Arbitration between Interdigital Communications and Huawei, International Court of Arbitration, International Chamber of Commerce, 2015. (testified in arbitration/trial)
15. Expert Witness for Reed & Scardino (for Mobile Telecommunications Technologies LLC) in Civil Action in Eastern District of Texas, Mobile Telecommunications Technologies LLC vs T-Mobile USA, Inc., Case No. 2:13-cv-886-JRG-RSP, 2015 (settled in 2015).
16. Expert Witness for Reed & Scardino (for Mobile Telecommunications Technologies LLC) in



- Civil Action in Eastern District of Texas, Mobile Telecommunications Technologies LLC vs Leap Wireless International, Inc. and Cricket Communications, Inc., CIVIL ACTION NO. 2:13-CV-885-JRG-RGP (testified in deposition), 2015.
17. Expert Witness for McKool & Smith (for Ericsson) in Ericsson versus Apple ITC Investigation No. 337-TA-953(testified in deposition, settled before trial in 2015) .
  18. Expert Witness for Munger, Tolles & Olson (for Ericsson) in Apple versus Ericsson, Case No. 3:15-cv-00154 JD in Northern District of California (settled in 2015).
  19. Expert Witness for Reed & Scardino (for Mobile Telecommunications Technologies LLC) in Civil Action in Eastern District of Texas, Mobile Telecommunications Technologies LLC vs AT&T Mobility, Inc. and Cricket Communications, Inc., Case No. 2:14-cv-00897-JRG-RSP, (testified in deposition, settled in 2016).
  20. Expert Witness for Reed & Scardino (for Mobile Telecommunications Technologies LLC) in Civil Action in Eastern District of Texas, Mobile Telecommunications Technologies LLC vs Samsung, Inc., Case No. 13-cv-259, (testified in deposition, settled in 2016).
  21. Expert for Finnegan (for LG) in LG Electronics, Inc. vs. Cellular Communications Equipment LLC, Inter Partes Review of U.S. Patents No. 8,868,060 and 8,848,556 (submitted declarations, Inter Partes Review), in progress.
  22. Technology Expert for Dechert (for Intellectual Ventures), Intellectual Ventures vs AT&T / T-Mobile in Civil Action No. 13-cv-1631-LPS (submitted technology evaluation report), in 2016.
  23. Expert Witness for Russ, August and Kabat (for SPH) in SPH America vs AT&T Mobility, Sprint Spectrum, Blackberry Limited, Huawei Technologies, ZTE, et al., in Case No. 3:13-cv-2318-CAB-KSC, Case No. 3:13-cv-2319-CAB-KSC, Case No. 3:13-cv-2320-CAB-KSC, and related cases (in progress in 2014 submitted declaration, deposition), in progress.
  24. Expert Witness for Mayer Brown, for Internation Arbitration between LG Electronics, Inc. and Nokia, January 2017.
  25. Expert Witness for Reed & Scardino in EON Corp. vs Apple, Inc., CASE NO. 3:14-cv-05511-WHO, Northern District of California, settled in 2017.
  26. Expert for Hoyng Rokh Monigen, Declaration in case Phillips vs ASUS, Amsterdam, January, 2017.
  27. Expert Decalartion re Appln. U.S. Patent No.: RE44,507 for Sugrue Mion (SPH America), February 2017.
  28. Expert Witness for Reed & Scardino in Customedia vs Dish Network, Civil Action No. 2:16-cv-00129-JRG, Eastern District of Texas, Expert report and deposition in 2017.
  29. Expert Witness for Rus, August and Kabat (for Vivato Tech) in Vivato Technologies vs Rukus, Case No. 2:17-cv-02961-AG(JCGx), Claim Construction Declaration in 2018.
  30. Expert Witness for Mayer Brown (for Hitachi Maxell) in Hitachi Maxell vs Huawei and Hitachil Maxell vs ZTE, Case No. 5:16-cv-00179-RWS, Expert Declaration in 2017.
  31. Expert Witness for Mayer Brown (for Hitachi Maxell) in Hitachi Maxell vs Huawei and Hitachil Maxell vs ZTE, Case No. 5:16-cv-00178-RWS, Expert Reports, declaration and deposition in 2018.
  32. Expert Witness for Wilson Sonsini (for Interdigital) in ASUS COMPUTER vs Interdigital, Case No.: 15-cv-1716 (BLF) , Expert report in 2018.
  33. Expert for Rus, August and Kabat (for Vivato) in XR Communications, dba Vivato Technologies vs Petitioners (RUCKUS WIRELESS, INC.; ARRIS SOLUTIONS, INC.; ARRIS ENTERPRISES, LLC; NETGEAR, INC.; AND BELKIN INTERNATIONAL, INC), Case IPR2018-01016 Patent No. 6,611,231. Declaration in October, 2018.




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## Teaching and/or Course Director at GWU

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ECE12 Signals and Systems	ECE246 Digital Communications
ECE143 Communications Engineering I	ECE247 Communications Systems
ECE144 Communications Engineering II	ECE248 Computer Networks I
ECE148 Simulation of Communications Systems	ECE249 Computer Networks II
ECE203 Stochastic Processes in Engineering	ECE253 Mobile Communications
ECE219 Computational Methods in Electr.Eng.	ECE257 Multiuser Communications
ECE241 Information Theory	ECE259 Wireless Networks
ECE243 Communication Theory I	ECE348 The Internet: Design and Implem.
ECE244 Communication Theory II	

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## Grants Received

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### Research

1. *Wireless Information Network for Airport Surface Traffic Automation Using GPS* (11/1/92-12/31/92), PI, Martin Marietta
2. *Wireless Information Network for Airport Surface Traffic Automation Using GPS - Network Topology and Frequency Band Considerations* (2/1/93-12/31/93), PI, Martin Marietta
3. *Spectral Shaping for Improved Capacity in Multiple Access Communications* (12/1/93-11/30/94), PI, University Facilitating Fund
4. *Research in Simulation of Communications Systems* (5/1/94-12/31/94), PI, Elanix
5. *Research in Multiuser Detection and Innovative Approaches in Teaching* (7/1/95-6/30/98), PI, NSF Faculty Early CAREER Development Award
6. *Integration of DBS into Digital Battlefield using Commercial LEO Systems* (10/1/95-9/30/98), PI for GWU, with Orbital Sciences Corp. (lead organization) and ALOHA Networks Inc. ARPA (GLOMO Program)
7. Research Experience for Undergraduates, Supplemental Grant from NSF (7/1/96-6/30/98)
8. *Multiuser Detection for IS-95 Air Interface* (1/1/97-12/31/97), NORTEL
9. *Multiuser Detection for Next Generation CDMA* (6/1/98-12/31/98), NORTEL
10. *Multiuser Detection for Next Generation CDMA* (6/1/99-12/31/99), NORTEL NETWORKS
11. *A Novel Packet Radio Network Architecture* (1/1/00-12/31/03), National Science Foundation
12. *Digital Signal Characterization*, (5/1/2000-4/30/2001), National Security Agency
13. *Multiuser Detection for 3G*, (6/1/2000-5/31/2001), NORTEL NETWORKS
14. *Ad-Hoc Networks*, (6/1/2000-5/31/2001), NORTEL NETWORKS
15. *Bitpipe*, (2/1/02-3/31/04), National Security Agency
16. *Routing in Ad-Hoc Networks Using CSI Information* (8/13/2002-2/12/2003), Innovative Concepts Inc
17. *Ad-Hoc Networks*, (6/1/2002-8/31/2004), NORTEL NETWORKS
18. Modeling and Simulation of Spectral and Spatial Efficiency ..., (12/15/2004-06/15/2005), US Army (with RKF Engineering)

### Software grants/gifts

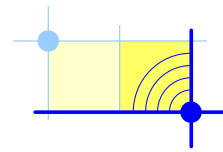
1. SPW and BONeS (CADENCE)
2. OPNET (MIL-3)
3. SystemView (ELANIX, Inc.)

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## Professional Activities

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- Senior Member of IEEE.
  - Past Vice Chairman, Communications Society of the Washington and Northern Virginia Chapter of IEEE.
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- Past Associate Editor of the IEEE Communications Letters
- Guest Editor, Journal on Communications and Networks, Special Issue on UWB Communications
- Chair, Technical Program, IEEE Communication Theory Workshop 1996, San Destin, FL.
- Chair, Technical Program, IRSS'97, Washington, DC.
- Chair, Technical program, MMT'98, Washington, DC.
- Member, Communication Theory Committee of the IEEE Communication Society.
- Member, Technical and Organizing Committee
  - International Symposium on Spread Spectrum Systems and Techniques 1988, Belgrade, Yugoslavia.
  - IEEE Communication Theory Workshop 1993, Marathon, FL.
  - 1<sup>st</sup> International Workshop on Mobility Management, GMU, Fairfax, VA, 1994.
  - Globecom 2007
- Member, Program Committee, Workshop on Mobility Management, Paris, 1996.
- Member, Program Committee, Workshop on Mobility Management, Melbourne, 1997.
- Member, Program Committee of CTMC 1999
- Technical Program Committee for MMT'02, Rennes, France, June 2002
- Member, Technical Scientific Program Committee of the 4<sup>th</sup> IEEE Conference on Mobile and Wireless Communications Networks, Stockholm, Sep. 2002.
- Technical representative of the IEEE Communication Society to MILCOM'96, Reston, VA.
- Session Chair:
  - International Symposium on Spread Spectrum Systems and Techniques, 1988.
  - IEEE Communication Theory Workshop, 1993.
  - MILCOM'96
  - Computer Communications Workshop, 1996
  - ISIT'98
  - IEEE Communication Theory Workshop, 2000.
- Technical reviewer:
  - IEEE Transactions on Communications
  - IEEE Journal on Selected Areas in Communications
  - IEEE Transactions on Circuits and Systems
  - IEEE Transactions on Vehicular Technology
  - European Transactions on Telecommunications and Related Technologies
  - Wireless Personal Communications (An International Journal)
  - National Science Foundation
- Member of the Communications, Vehicular Technology and Signal Processing Societies and Information Theory Group of the IEEE.
- Member of the US Section of URSI.

## Awards

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1. Best Paper Award at ACM MSWiM'99: F. Alagoz, A. AlRustamani, D. Walters, B. Vojcic and R. Pickholtz, "On the effects of adaptive forward error correction mechanism in direct broadcast satellite networks", MSWiM'99, August 1999, Seattle, WA.
2. National Science Foundation Young Faculty Early CAREER Development Award in 1995.
3. Radio TV Belgrade (Yugoslavia) Annual Award for the Best Paper in 1990 for the paper: B.R. Vojcic and R.L. Pickholtz, "Performance of coded direct sequence spread spectrum in a fading dispersive channel with pulsed jamming", IEEE J. on Sel. Areas in Commun., vol. 8, NO. 5, pp. 934-942, 1990.

## Patents (sample)

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1. "Multiuser Detection for Direct Sequence Code Division Multiple Access (DS/CDMA) Channels", WO 02/33838, 4/25/2002
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