

Jack G. Ganssle

The Ganssle Group
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Overview

Jack Ganssle has spent forty years in the embedded systems industry. He started three high tech companies, built or managed the development of over 100 embedded systems, and now advises companies, lectures, and writes (six books and over 1000 papers) about embedded systems. He was the only embedded person on NASA's Super Problem Resolution Team, created by the Columbia Accident Investigation Board to harness the expertise of highly-respected people from outside of the agency. He has worked on many classified government projects and has held various security clearances, including Top Secret/Special Intelligence. He also works as an expert witness in patent and other disputes.

The Ganssle Group (4/97 to Present)

Principal Consultant of The Ganssle Group. Author, lecturer, advisor to developers and managers at embedded development companies worldwide, and expert witness.

Softaid, Inc. (1/83 to 4/97 - President)

Founder and CEO of Softaid. Responsible for all company operations. Also founder and Chairman of Softaid Internet Services, an internet service provider which was a subsidiary of Softaid, Inc, and was one of the early ISPs.

Softaid designed, manufactured, and sold in-circuit emulators and related products to the embedded systems industry. These devices are used by engineers to design new computer-based products like microwave ovens, security systems, and factory automation equipment. Mr. Ganssle designed the firm's original line of products, and then supervised the design of all succeeding generations of the products. Also wrote several versions of a multitasking Basic compiler targeted at embedded applications. Worked with engineers who were developing a vast array of embedded systems throughout the world. Mr. Ganssle also developed systems for the US intelligence community.

Softaid received awards from Washington Technology Magazine for being one of the 50 fastest growing companies in the Mid-Atlantic region. The Company also received the Venture Award for fast growth and job creation.

Sold Softaid and Softaid Internet Services to The Avocet Group in April, 1997.

Applied Processor Technology, Inc. (1/81 to 1/83 - Vice President)

Co-founder of APT. Responsible for corporate and financial planning. APT was profitable every quarter. Wrote company's business plan and numerous winning proposals. Supervised the technical staff.

Designed and implemented over 50 embedded systems for clients throughout the USA, including classified government projects, the White House security system (which used over 100 interconnected processors and some 2000 sensors), deep ocean probes, and steel thickness gauges that gathered and processed data from hundreds of sensors spread throughout the plants.

Neotec Corporation (1/74 to 1/81)

Responsible for all of the company's digital design and programming of bit-slice, mini-, and microprocessor systems. Projects included design of unique high-resolution color graphics equipment, disk controllers, and real-time control and data reduction computers for spectrophotometer systems. Devised new mathematical techniques for analyzing spectrophotometer data.

Developed on-line factory and process control equipment and grain quality analyzers. Developed some of the first-ever products using microprocessors. Worked with essentially all of the processors of the time in locations on 5 continents.

Education

Completed four years of electrical engineering at the University of Maryland (1971-1975), though was short three courses for degree completion. Later (2000-2002) taught senior and graduate-level electrical engineering classes at the same school.

Other Affiliations

- Given the 2014 ACE Award for contributions to electronics.
- Member, advisory board, IEEE Embedded Systems Letters, May 2009 to present
- Voted "Most Significant Embedded Individual" by Embedded Systems Design readers, May 2008.
- Member of NASA's Super Problem Resolution Team, created in the wake of space shuttle Columbia's breakup to provide expert assistance to NASA, 2003-2008.
- Member, Editorial Review Board, Embedded Systems Design Magazine, 2001 to 2012
- Member, Board of Directors, Z-World, Inc, 2003 till the company was sold in 2004
- Member, IEEE
- Member, ACM
- Conference Chair, Embedded Systems Conference - India 2013

- Holds Amateur Radio Extra Class license, and a commercial radiotelephone license.
- Member, Advisory Board, Triscend Corporation, 1997 till sold in 2004
- Instructor, Electrical Engineering Department, University of Maryland, 2000 to 2002.
- Technical Editor, Embedded Systems Design, 1999 to 2007.
- Member, Advisory Board, Embedded Systems Conference, 1995 to 2014
- Member, Advisory Board, Capitol College, 1992 to 2000.
- Vice President, Howard County Chamber of Commerce, 1991-92 and 1995-1996
- Member, Board of Directors, Howard County Chamber of Commerce, 1990 to 1996.
- Member, Board of Directors, Howard County High Tech Council, 1990 to 1999.
- Member, Board of Directors, Candlelight Concert Society, November 1992 to 1994.

Papers Presented

- Presented over 100 papers at conferences on five continents. Examples include:
 - Really Real-Time Systems – Embedded Systems Conference (ESC) 2014
 - Mars Ate My Spacecraft - ESC 2013
 - Using Standards and Inspections - ESC 2013
 - The Microprocessor at 40 - ESC Brazil 2011
 - The Truth About Multicore Processors - ESC India 2007
 - Using Design by Contract in Firmware - Oredev Sweden 2006
- Keynote speaker at numerous conferences including the Embedded Systems Engineering Kongress (Stuttgart, 2014), International Conference on Reliable Software Technologies (Berlin, 2013), The Embedded Systems Conference (2008, 2003, and 1998), ESC-Brazil (2011, 2013), ESC-India (2007, 2013), Oredev (Malmo, Sweden, 2006) and CIISA 2007 (Guadalajara, Mexico).

Books

- Ganssle, Jack. The Art of Designing Embedded Systems, 2nd Edition. Newnes, 2008, 298 pages
- Ganssle, Jack (editor). Embedded Systems – World Class Designs. Newnes, 2008, 560 pages
- Ganssle, Jack (editor). The Firmware Handbook. Newnes, 2004, 365 pages
- Ganssle, Jack and Barr, Michael. The Embedded Systems Dictionary. CMP Books, 2003, 290 pages
- Ganssle, Jack. The Art of Designing Embedded Systems. CMP Books, 2002, 280 pages
- Ganssle, Jack. The Art of Programming Embedded Systems. Academic Press, 1992, 274 pages
- Ganssle, Jack. Go West! The Story of the Singlehanded Transatlantic Race. 1992.

Publications

Over 1000 papers published about embedded systems, covering both the hardware and software aspects of these devices. Examples include:

- Hardware and Firmware Issues in Using Ultra-Low Power MCUs (series of articles in 2013 and 2014 on embedded.com).
- The Microprocessor at 40 (Embedded Systems Design Magazine, November, 2011)
- Born To Fail - Watchdog Timers (Embedded Systems Design Magazine, January 2003)
- Firmware Disasters (Embedded Systems Programming Magazine, December 2004)
- The Case of the Crashing 68000 (EDN Magazine, October 1994).
- Designing an Embedded RTOS (Circuit Cellar Ink Magazine, October 1998)

Television

Appeared as an embedded systems expert on the History Channel's *Modern Marvels*, 2004.

Testimony

Expert witness in Segway Inc., DEKA Products Limited Partnership, and Ninebot (Tianjin) Technology Co., Ltd. v. Inventist, Inc., et al, ITC Inv. No. 337-TA-1007/1021 (combined) (in 2016 and 2017). The complaint was filed by Segway et al against a number of hoverboard suppliers. I was retained by Segway and testified in a deposition and at the ITC hearing.

Expert witness in Keith Cavanagh and Leslie Cavanagh v. Bio-Dynamic Inc., and Coolsystems, Inc. (United States District Court District of Connecticut) Civil Action No. 3:14-cv-1938 (SRU). I was retained by the Cavanaghs.

Expert witness in Certain Computing or Graphics Systems, Components Thereof and Vehicles Containing Same, ITC Inv. No. 337-TA-984. The complaint was filed by AST against a number of automotive suppliers. I was retained by AST.

Expert witness in an *inter partes review* filed by Toyota Motor Corporation against Cellport Systems, Inc. in 2015 (IPR No. IPR2015-00633). Testified at deposition. I was retained by Cellport to defend their patent.

Expert witness in Metso Minerals v. Conveyor Dynamics et al (Superior Court of the State of Washington No. 152007684) in 2015. I was retained by Metso to find the theft of trade secrets.

Expert witness in Certain Personal Transporters, Components Thereof, and Manuals Therefor, ITC Inv. No. 337-TA-935 in 2015. This complaint was filed by Segway, Inc., against six Chinese companies. I was retained by Segway. I filed a 770 page report.

Segway prevailed over five of the defendants and was purchased by the sixth! As part of this I reverse-engineered the Segway Personal Transporter, as well as several similar units from the Chinese defendants.

Expert witness in *Pentair and Danfoss v. Hayward*. District Court for the Eastern District of North Carolina Western Division, Civil Action 5:11-CV-459-F. I was retained by Hayward.

Expert witness in *Apple v. Nokia*. Testified in a deposition and at a hearing before the International Trade Commission, Washington, DC, 2010. ITC 337-TA-704. I was retained by Apple, and reverse-engineered both the iPhone 3 and several Nokia mobile phones.

Expert witness in *Baxter et al v. Fresenius*. Testified in a deposition and at trial in the United States District Court for the Northern District Of California San Francisco Division, 2009-2010. Case No. C 07-01359 PJH. I was retained by Baxter et al, and reverse-engineered both Baxter's and Fresenius's (the Liberty Cyclor) peritoneal dialysis devices.

Expert witness in an employment discrimination matter in *David Brenner v. Radix Systems*. Testified in a deposition, 1992.