

JR HOELL

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DIRECTOR OF MECHANICAL OR MANUFACTURING ENGINEERING

Executive Summary: A dynamic mechanical/systems engineer with a passion for leading and mentoring creative technical teams to deliver innovative/revolutionary products. A proven track record of shepherding safety critical products through the medical/functional safety product development cycle while maintaining a hands on involvement with the detailed design. Skilled in cross functional team management, system architecture design, detailed specification authorship, component/sub-system selection, system verification and validation. Extensive experience directing the development and launch of complete systems and subsystems across the spectrum of EE/ME/SW and Industrial Design disciplines.

PROFESSIONAL EXPERIENCE

ASTRONICS AEROSAT Amherst, NH

2013-2016

Avionics supplier of antenna and control systems for satellite based TV and broad band data

Chief Mechanical Systems Engineer (2013 - 2016)

Mechanical systems engineering lead and interim manager of 3 engineers and 5 mechanical designers. Led the effort on the refinement of current avionics platforms as well as supported the development of a new class of fuselage and tail-mount gimbled antennas.

Key Accomplishments:

- Developed mechanical system architecture for an ARINC 600 4MCU Antenna Control Module. The updated design reduced the module mass by 35%, the product volume by 40%, the assembly time from several man days to 4 hours and dropped the internal ambient temperature by greater than 17°C over our predominate selling product. This was done during a product upgrade to increase functionality.
- Interim Mechanical Engineering Manager to a team of eight until a long term team lead was recruited and hired. Estimated project effort, scope, resource needs and time lines. Organized and drove design reviews to ensure specification compliance.
- Authored various mechanical system and subsystem specifications for components and modules.
- Developed an integral redundant radome/containment system for wide-body aircraft that is currently in the patent process.

SEGWAY INC. Bedford, NH

2008 – 2013

Advanced electric transportation development and manufacturing firm

Director, Mechanical Engineering (2011 - 2013) Mechanical Eng. Manager/ Principal Engineer (2008 - 2010)

Recruited back to Segway to lead the mechanical engineering team in the development of the conceptual General Motors EN-V platform. Responsible for hiring and mentoring the additional engineering staff needed to complete the project. Led the architectural breakup, function allocation, design of the structural, energy storage and propulsion system portions of the project. Directed the mechanical engineering team through the first significant Personal Transporter cost reduction redesign.

Key Accomplishments:

- Technical lead/program manager for the development of the 3rd generation Segway Personal Transporter energy storage sub-system. The program included the complete redesign of the mechanical battery architecture as well as the electrical embedded system. The program goal was a significant cost reduction to the BOM, while implementing a real time, on board, data acquisition and logging system.
- System architect and design lead for the first significant electro-mechanical cost reduction of the Segway PT since the 2006 product launch of the 2nd generation product.
- Principal engineer and mechanical lead for the rolling chassis portion of the PUMA/EN-V platform (Personal Urban Mobility and Accessibility vehicle) including direct oversight of 7 internal mechanical engineers, 3 mechanical technicians and 3 outside development firms for the Puma project. Responsible for contractual negotiations for extended service contract allowing GM to continue to use the conceptual vehicles for an additional year.
- Led the exploration into several alternate forms of balancing and non-balancing electrical transportation products for future product platforms.

BEZALEL DESIGN INC. *Dunbarton, NH*

2000 – Current

Private engineering consulting firm

Principal

Founded and operated a successful product development consulting firm specializing in the development of consumer and telecommunication products.

Key Accomplishments:

- Developed a new low cost optical Ethernet box for the client reducing BOM cost by more than 30% and labor by 60%. Complete product development program for the client, including: industrial design, part and assembly design, manufacturing documentation, product labeling and assembly fixtures.
- Developed an optical ophthalmic lens inspection and quantification system. Complete product development program: industrial design, color studies, part and assembly design and development, manufacturing documentation, product labeling and initial assembly.
- On-site consultation on the development of a low cost water compression-distillation purification system for the 3rd world. Detailed research and development of specific subsystems, including all CAD work, detailed drawings and prototyping.
- Supervised mechanical development of a pre-press plate setter and oven system. Mechanism refinement for loading and aligning printing plates and material selection for UV shielding. Complete reverse engineering and CAD development of an existing inkjet platform as chassis.
- Complete system and chassis development for a 21U telecommunication optical hub. Responsible for all mechanical packaging, thermal and shock load engineering.

FARM DESIGN INC. *Hollis, NH*

2006 – 2008

“Total Product Development” consulting firm specializing in the development of both medical and laboratory products

Program Manager (2007 - 2008) Sr. Mechanical Engineer (2006 - 2007)

Principal systems engineering lead and director of 4 engineers and 2 industrial designers on the development of a new blood glucose meter. Acting project engineer during the initial program phases, leading the design reviews for both the client and their preselected contract manufacturers.

Led the architecture down selection, manufacturing layout and assembly sequence, and wrote requirements for the individual parts of the device. Supervised the engineering team tasked with delivering a tool/manufacturing ready database. Developed the manufacturing plan and coordinated all supplier Design For Manufacturing (DFM) feedback. Oversaw pilot tool build and initial tool sampling. Authored the critical architecture milestone documents ranging from “the lessons learned” and Pugh charts through the DFMEA to assist the client in managing long term refinement and product upgrades.

Key Accomplishments:

- Led the technical development of a high volume (>10,000/day) hand-held ISO 13485 compliant medical device. Acting project engineer in running this \$2+ million development program.
- Lead mechanical engineer for the development of an “artificial kidney” for acute renal failure. Oversaw the industrial design and implementation, led the detailed engineering of various subsystems, and authored the system architecture development.
- Led the internal Farm mentoring and instruction efforts for DFM/DFA and manufacturability.
- Technical lead on the development of a low cost, open loop 3 axis pick and place robotic arm requiring a true position head accuracy of 0.05mm.
- Program manager and lead engineer for the first large “green” Cradle-to-Cradle, LEED certified product developed by Farm (Recycled PC architectural lighting fixture).

SEGWAY LLC. BEDFORD, NH

1999 - 2004

Manufacturer of revolutionary dynamically stabilized transportation device

Sr. Mechanical Engineer (2003 - 2004)

Engineering consultant (1999 – 2003)

Contracted by Segway for the design and development of each of the following components: (i series and p series) chassis, wheels, fenders and batteries. Packaging engineer responsible for all space allocation for internal electrical components, PCBA, motors and inertia sensors. Developed the fatigue test structure for testing chassis/gearbox/wheels. Managed the CAD database interface with the gearbox design house. Responsible for implementing the selected industrial design and managing the master surface model. Part of the engineering team that developed the spin off product “Centaur.” Lead engineer on the steering and suspension design.

EDUCATION, COMMUNITY INVOLVEMENT AND TRAINING

B.Eng, Materials & Metallurgical Eng. STEVENS INSTITUTE OF TECHNOLOGY, Hoboken, NJ

M.Eng, Engineering and Management STEVENS INSTITUTE OF TECHNOLOGY, Hoboken, NJ

NH State Representative (2010-2016): Executive Departments & Administration ('15/'16),

Children and Family Law ('13/'14), Education ('11/'12)

PATENTS GRANTED: USD748533, US9126497, US8490723, EP2539216B1, EP2389558B1, EP2044893B1, US8522468, US8366883, US7823315, US6598941, USD528468, USD493128

APPLICATIONS IN PROCESS: US20150191256, US20110209929, US20110119982, US20090088792, US20070017192A1, US20070089347A1, US20020121805A1

Personally own seats of the following CAD tools: Pro-Engineer and SolidWorks.