

PRODUCT AND SYSTEMS ENGINEER, PROJECT MANAGER*Product Development, Technology Development and Business Development Support***SUMMARY OF QUALIFICATIONS**

Seasoned systems engineer, design engineer, and research consultant with diverse experience in electronics circuit design, software and firmware development, and analog, RF, and digital designs. System level experience in thermal design and mechanical packaging. Skilled at specification development and system concept creation. Experienced in telecommunications, land mobile radio, military, space, and avionics applications.

Versatile technical and business development background. Drives workable solutions that optimize next generation product designs and timely market availability. Brings more than 15 years of experience in technology development – willing and able to rapidly fill roles in any relevant functional expertise.

Key product development skills are:

- Project management and planning.
- Vendor selection and partnering.
- Sales & Marketing collaboration.
- Customer liaison, contact development.
- Technical troubleshooting.
- RF/wireless system and network design.
- Internal business analysis.
- Developing and mentoring staff.

Resourceful project manager and product designer adept at overseeing multi-million dollar projects as well as small study teams. Recent examples include, but are not limited to:

- System Design for small (pocket size) Ku band military transceiver, S band Space segment TT&C transceiver
- Troubleshooting third party designs on ARM and MSP430, from VHF through 8 GHz, High Voltage (2 KV, 1 MHz) power supplies, and integrated GPS
- Detailed fill in design resource for challenging power supply, legacy digital video replacement, low power RF transceivers and driver software for RF and hardware user interface elements of designs
- Managed base station project team employing 40 staff and integrating five engineering disciplines.
- Studied broadband wireless access within a special engineering team which resulted in \$30M corporate commitment, including 100 dedicated employees, to new business area. Performed technical analysis and collaboration with sales/marketing groups to offer a business case for indoor coverage solutions to increase cellular bandwidth at lower cost to consumer.
- Developed successful IP Security system specification when expert resources were not available.
- New hire candidate resume and telephone screening. Job description development and review.

Team builder and global research collaborator.

- Expanded Nokia's Global Product Development Organization within extreme budget constraints.

PROFESSIONAL EXPERIENCE**INDEPENDENT CONSULTANT – Southlake, TX****Systems Engineer, Circuit Designer, Project Manager****2009 to present****Targeted tasks on a contract basis for a variety of clients, including:**

- Project leader of an outside evaluation and redesign prescriptions for a **specialized high voltage (KV) and high frequency (> 1 MHz) power supply**.
- Design, installation, upgrades to, and maintenance of an IP **routing research installation**.
- High speed **microwave radio and data transmission systems** for confidential customers.
- Analysis of Automatic Identification System (AIS) product requirements and development of product architecture.
- System level design and support for a base station baseband transmit ASIC which interfaced to a Common Public Radio Interface (CPRI) standard RF head.
- Design of control circuitry for a broadband multiway RF switch. The challenge in this case was to meet performance requirements within an aggressive consumer cost structure, minimizing both component cost and count.
- Product performance testing for several consumer and industrial products.
- Propagation performance and plot generation to support licensing and dispute resolution.

- Aerial leakage and interference measurement system analysis and architecture design.
- Radio-frequency identification (RFID) component and system design.
- Low power RF Link hardware analysis design.
- Legacy compressed video system analysis and design of system upgrade.
- Advancing the next phase **system design of a prototype military Ku Band Microwave transceiver**. This phase of the project added a number of features and reduced a toaster-sized unit to something that will fit in a shirt pocket with commensurate reductions in weight, power and improvements in battery life.

As part of this project, I:

- Compensated for resource limitations by performing detailed design and supplier evaluation where resources were not available in a timely fashion. I have done the complete power architecture and power circuit design as well as most of the 4 GHz transceiver IF design.
 - Coordinated early team and subcontractor activity, remotely and on-site, through system specifications and careful communication.
 - Designed and implemented challenging low power (microwatt average) 35 watt peak power supply.
 - Presented new management tools and techniques to monitor, measure, and improve key performance parameters.
- System analysis and subcontract management for the space segment of a satellite transceiver system.
 - Analysis and diagnosis of a multicarrier radio system.

NOKIA and NOKIA SIEMENS NETWORKS – Irving, TX

Wireless Research Manager

2008-2009

Headed U.S. efforts (with counterparts in Finland and Europe) in a variety of areas with responsibility for:

- Identification and evaluation of new technology areas and opportunities.
- Development of system concepts and business models to exploit new technology areas.
- Development of technology specific corporate level strategies and plans.
- Planning and management of US team and budget.

Wireless Technology Manager – Americas

2001-2008

Headed U.S. efforts (with counterparts in Finland and Europe) in a wide variety of confidential and proprietary areas with responsibility for:

- Identification and development of technologies and designs for use in next generation products.
- Research and analysis of technologies and optimum entry points into new business areas.
- Management of long-term university and consultant research projects.
- Development of business cases and collection of data to support those cases, and forward-looking partnerships.
- Management of small, niche projects focusing on speculative products and product areas.

Program Manager - Americas

2000-2001

Dedicated manager of project developing a new product for Nokia's base station product line.

- Managed five engineering groups, including Mechanical (Packaging and Thermal), RF, Digital, Software, and support functions which included Testing and Verification, Manufacturing, and Sourcing.
- Led the development process through requirement identification, development planning, business case development, budgeting, and cost center management.

RF Technology Manager

1996-2000

Coordinated activities with counterparts in Finland, Sweden, Tokyo, and the U.K.. Developed and administered up to \$15M annual budget meeting the following organizational challenges:

- Built U.S. RF ASIC Development Group.
- Integrated and assembled organization within tight salary constraints – focused on engineers with transferable skills.
- Expanded organization from 20 staff members to 125 staff members over two years.
- Developed a management infrastructure to accommodate rapid growth of team and low experience levels.

SOUTHWEST RESEARCH INSTITUTE – San Antonio, TX

Senior Research Engineer

1987-1996

Project manager, senior engineer, and troubleshooter managing design work with contract values from \$10K to \$4.5M.

- Project manager, proposal author, senior technical staff, and key customer contact on several projects.
- Completed digital design projects based on microprocessors, discrete random logic, state machines, and programmable logic devices – with much work requiring analog and RF circuit and systems design. Extensive software development
- Authored a 300-page integrated test system requirements specification and supported a \$250M acquisition by the USAF.

DATAPPOINT CORPORATION – San Antonio, TX

Manager of RF Design, Advanced Products Division

Managed and contributed to a team of engineers specializing in high speed digital, analog, video, and RF circuit design. Led several design projects involving broadband system, system component design and software development.

MITRE CORPORATION – Washington, D.C.

Member, Technical Staff

Technical advisor to the U.S. Navy on advanced anti-jam communications techniques. Provided direct field support and research into highly jam resistant communications with prototype designs and advice on upgrades to current systems.

GTE CATV DIVISION – El Paso, TX

Senior Engineer

Designed broadband amplifiers for use in cable television systems for moderate to high volume manufacturing.

ROCKWELL INTERNATIONAL – Collins Avionics & Missile Groups-Cedar Rapids, IA

Engineer/Scientist

Designed power supplies, RF circuitry, GPS receiver circuitry, and communications audio circuits for high reliability civilian and military avionics. Designed a complex multiple microprocessor system and its real-time multitasking operating system, weather radar display components, and frequency synthesizers.

PATENTS

U.S. Patent Holder, Patent No.: US 7,274,299 B2, September 25, 2007.

EDUCATION, CERTIFICATIONS, AND LICENSES

B.S., Electrical Engineering, University of Wyoming
Texas Professional Engineer, Number 52257 (Inactive)
US Citizen

Private Pilot Certificate
Amateur Radio Extra Class