ALVIN DEROUEN

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SUMMARY OF QUALIFICATIONS

20 years' total experience in project management, electronics design, and programming. Extensive experience in the product design process at the project level and the design level. Combines creativity and problem solving capabilities with expertise in multiple areas to produce practical and minimum cost designs in a timely manner.

Due to space limitations, this resume is extremely abbreviated. More detailed information may be found at www.alvinderouen.com/resume.

AREAS OF EXPERTISE

Management:

- 15 years of experience in project management.
- Taking a project from conception to production.
- Capable of "wearing many hats" performing tasks crossing multiple fields.

Hardware Design:

- 20 years in general hardware design.
- 13 years in research and development of new products.
- Real-time embedded systems.
- Utilized various microprocessors using CISC, RISC, and DSP architecture.
- Analog/Digital and Mixed Signal hardware design including:
  - A/D and D/A design.
  - Power Supplies [AC/DC, DC/DC, DC/AC, AC/AC]: Linear/Switching.
- PCB schematic and layout.

Software Design/Programming:

- 18 years of experience in software design/programming.
- System level design in addition to design of individual modules.
- Real-time embedded systems.
- OS design (various real-time kernels for embedded systems).
- C, various Assembly languages.

REPRESENTATIVE PROJECTS

An expanded work history with responsibilities is available at: www.alvinderouen.com/resume

- **Sedona Scientific:** Devised modifications for the US Army's Cockpit Air Bags System (CABS). The CABS project was in danger of being cancelled due to specification changes. The modifications consisted of a hardware/software combination that reduced the probability of inadvertent activation by a factor of 1,000 and a back-up power supply that operated under mil-spec conditions for 20 years without batteries or maintenance. In addition, reduced assembly cost by 30% while increasing the reparability and testability. The system has won two national awards and more important, functioned properly in two crashes of BlackHawk helicopters, thus saving the lives of the occupants.
- **Sedona Scientific:** A battery powered Ultra-Sonic Sensor mounted on a military parachute pack, which provides an actuation signal at a specific distance above the landing zone. The unit actuates a device that slows descent rate. The system includes a custom switching power supply to extend battery life.

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REPRESENTATIVE PROJECTS, CONTINUED

- **General Engineering and Construction:** Designed and programmed a Load Flow Control system, maintaining the flow and billing of electric power to individual cities based on demand in real time. The involved cities were so satisfied with the system that a consortium was formed to take the system statewide.
- **Fire Wind and Rain:** A 4000-watt 60-Hertz, DC to AC sine wave inverter suitable for powering an entire household from batteries charged by wind power or solar cells. The unit was designed to meet all power grid requirements. In an independent lab test, this unit was judged to have better performance and a lower cost than any of the units from competing manufacturers tested.
- **Process Control Services:** Developed and programmed a control system to operate an automatic filtration system for offshore oil and gas platforms. The system used a 68hc11 with a custom multitasking operating system to operate over 30 simultaneous real-time tasks based on both internally timed and external triggers. This system worked so well, the customer went directly from the first prototype to the building of a production unit.
- **Process Control Services:** A mobile control system that pulse width modulated heaters used to stress relieve the welded joints on up to 24 metal pipes simultaneously to a precise profile. This unit was the first system that the customer tested able to handle the vibration produced by backcountry roads without failure. In addition, the unit was the lowest cost system available.

EMPLOYMENT HISTORY

ALDER Engineering **2001-Present**
Provides engineering consulting, design, and programming on a contract basis.

Fire Wind and Rain Technologies LLC **2000-2001**
Designs and markets electronic products to facilitate the use of alternate energy sources such as Solar Cells and Wind Turbines.

Sedona Scientific (a division of Simula Safety Systems) **1996-2000**
Simula Inc. - Designs and markets equipment and materials focused on saving lives, including air bag systems, parachutes, armor, aircraft seating, etc.
Sedona Scientific - Provides new product development of electronic devices used by other Simula divisions.

Circuit Research Labs Inc. **1995-1996**
Designs and markets state-of-the-art equipment for use in commercial radio stations around the world.

InterACTIVE Digital Devices Inc. **1993-1995**
Designs and markets software and electromechanical devices such as joysticks, pedals and steering wheels for use with computerized games.

Process Control Services **1987-1992**
Designs and markets computerized real-time control systems for industrial (milling, heat-treating, petroleum production, etc) and utility (power generation, wastewater treatment and drinking water production).

General Engineering and Construction **Prior to 1986**
Designs and markets computerized real-time control systems for industrial (petroleum production, salt production, asphalt production, etc.) and utility (power generation).

Due to space limitations, the following information may be found at www.alvinderouen.com/resume:
PAPERS – PATENTS – PERSONAL AWARDS – EDUCATION