

Sr. Software Engineer

Department:	<i>Engineering</i>
Reports To:	<i>Software Engineering Manager or Lead</i>
Supervises:	<i>None</i>
FLSA Classification:	<i>Exempt</i>
Approved By:	<i>Tim Erickson –VP Engineering</i>
Revision Date:	<i>07/20/2021</i>

JOB PURPOSE:

The Sr. Software Engineer is passionate about software development best practices.

They are experienced at understanding the problem domain. They participate in soliciting requirements by interviewing stakeholders, ingesting standards documents, and complying with government regulations and documented industry standards.

The Sr. Software Engineer considers system constraints and business constraints as they break requirements down into designs. They collaborate with peers, subject matter experts (SMEs), and stakeholders early and often when considering design options.

Their software implementations are constructed of verifiable software blocks that meet or exceed product (internal/external) requirements. This person understands technical debt and reduces it whenever possible.

They create supporting documentation from all activities, supporting a standard library of verified software blocks. When executing their duties, they adhere to established new product development (NPD) processes and strive for continuous improvement.

ESSENTIAL DUTIES and RESPONSIBILITIES:

- Work in an agile team culture closely collaborating and mentoring team members.
- Participate in developing clear project requirements based on (internal/external) customer needs, government regulations, and industry standards.
- Helps establish and support a project plan and schedule to meet and achieve project deliverables as defined by the project requirements.
- Design, develop, document, and review software to product/project requirements.
- Design, develop, document, and review build pipelines.
- Ensure product compliance to adopted company/industry standard specifications for software quality.
- Create and maintain product documentation such as technical data sheets and manuals.
- Write reports, letters, comprehensive design proposals, and progress reports.
- Design and perform verification and validation testing on products and sub-assemblies to confirm hardware and/or software performance to design standards, requirements, and/or industry standards. This will include manual, unit, and/or automated testing.
- Resolve issues that are preventing shipment of products.
- Identify, track, and correct software defects.
- Remain current in new software engineering technology and best practice through study and continuing education.
- Provide technical expertise and aid to customers. This may include travel to customer's site to commission and/or troubleshoot products. Travel by plane and/or automobile and overnight stays may be required including international travel.
- Present information orally and in writing to technical and managerial personnel and to small groups.
- Collaborate with operations, project management, and business development to release new or updated products via engineering changes and/or deviations.
- Aid Business Development in developing formal responses to customer requests for product quotations (RFQ)
- Collaborate with Quality Assurance to resolve any product related issues including root cause analysis of returns.
- Collaborate with and direct outsourced vendors.

- Champion the culture by supporting the HED mission and modeling the core values and behaviors HED has chosen to define how employees approach and complete their areas of responsibility.
- Provides a collaborative, comfortable, and inclusive environment.
- Celebrate success and learn from failure.
- Other duties as assigned by the Software Engineering Lead or Manager.

MINIMUM KNOWLEDGE, SKILLS, ABILITIES and EXPERIENCE:

Education:

- BA/BS Degree in Electrical Engineering, Computer Science/Engineering, or similar.

Skills:

- All developers:
 - Proficient computer literacy for Windows based computers. MS Office experience preferred.
 - Proficient with standard programming concepts, practices, and procedures
 - Proficient with standard problem-solving/trouble shooting skills (such as 5 Why, Fish bone, etc.)
 - Proficient with implementing unit tests for software including test driven development.
 - Proficient with implementing build pipelines.
 - Proficient in defining problems, collecting data, establishing facts, and drawing valid conclusions.
- Microcontrollers:
 - Proficient with C
 - Proficient with working with hardware, schematics, and datasheets.
 - Proficient with developing drivers for microcontroller peripherals.
 - Proficient with developing boot loaders and flash reprogramming.
 - Proficient with test equipment such as emulators, debuggers, multimeters, and oscilloscopes to debug and verify proper operation of system software.

Abilities:

- Good verbal and written communication skills
- Highly organized
- Strong attention to detail
- Able to think critically
- Able to effectively present information.
- Able to estimate engineering hours and resources to assigned project activity.
- Able to manage projects to quality, cost, and delivery targets.
- Self-motivated and flexible with an ability to work within a fast-paced environment.
- Able to think and understand quickly; highly motivated to continue learning.

Experience:

- 5+ years' experience working in a design and development role for software in a product similar to HED, in an industry servicing the OEM market.
- Experience being assigned multiple tasks and completing them while being self-directed.
- Experience successfully collaborating, mentoring, and influencing others.

PREFERRED KNOWLEDGE, SKILLS, ABILITIES and EXPERIENCE:

Skills:

- All developers:
 - Proficient in using Git for version control.
 - Knowledge of working with open-source software communities
- Microcontrollers:



- Knowledge of CAN
- Knowledge of PWM drivers
- Knowledge of ADC drivers
- Knowledge of encryption algorithms
- Knowledge of closed loop controls such as PID
- Knowledge of vehicle trouble shooting.

Experience:

- Interfacing directly with customers.

PHYSICAL AND MENTAL DEMANDS:

While performing the duties of this job, the employee is frequently required to sit, talk and/or hear, and/or use hands to finger, handle, or touch objects, tools, or controls. The employee is occasionally required to stand, and/or walk. The employee must occasionally lift and/or move up to 10 pounds while moving files or small packages. Specific vision abilities required by this job include close vision and the ability to focus.

The mental and physical requirements described here are representative of those that must be met by an individual to successfully perform the essential functions of this position.

WORKING ENVIRONMENT:

Work is typically performed in an office environment. The noise level in the work environment is usually moderate. Infrequent travel to a customer's location may be required and may include factory or test environments.

The work environment characteristics described here are representative of those an individual may encounter while performing the essential functions of this position.

I have read and understand the duties, responsibilities, and requirements for this position.*

Employee Acknowledgement

Date

*This document does not create an employment contract, implied or otherwise, other than an "at-will" employment relationship. HED, Inc. retains the discretion to add duties or change the duties of this position at any time.