This position requires an active TS/SCI Security Clearance
Title Hardware Design Engineer (HDE) 3
Location: Hanover, MD

Description
Designs and tests new integrated circuits and hardware components for a wide variety of signal processing applications and research. Designs, documents, and develops code (to include firmware) for digital signal processors or other programmable hardware devices such as Application Specific Integrated Circuit (ASIC) and Field Programmable Gate Array (FPGA) hardware. Analyzes the function of existing integrated circuits and hardware components for the purpose of reverse engineering the hardware and firmware. Conducts the necessary hardware engineering and related functions to modify and adapt vendor-manufactured hardware to meet special Government needs and contingencies.

The Level 3 Hardware Design Engineer (HDE) shall possess the following capabilities:

- Assist with designing new products and processes and improving and maintaining existing
- products
- Conduct design analysis on components and/or assemblies to assist in the development process
- by ensuring designs are cost efficient, able to be manufactured, and reliable
- Communicate with the other engineering personnel to coordinate the interrelated design and
- assure project completion
- Apply ASIC or FPGA place and route (P&R) tools with various libraries to create physical
- implementations of designs
- Develop and maintain documentation for the P&R design flows
- Assist with de-processing electronic components and retrieving stored firmware or software
- using approved reverse engineering procedures
- Design new products and processes and improving and maintaining existing products
- Integrate new P&R tools, P&R tool updates, and ASIC or FPGA design libraries into
- Government's computer aided design environment, documents the use of those tools and libraries,
- and Assist other physical designers to successfully complete their specific P&R design tasks
- Work with tool and library vendors to develop solutions for designers' P&R design challenges
- Perform the de-processing of electronic components and retrieving stored firmware or software
- using approved reverse engineering procedures
- Lead the designs of new products and processes and improve and maintain existing products
- Provide technical leadership to less experienced engineers
- Perform the de-processing of electronic components and retrieving stored firmware or software
- using approved reverse engineering procedures and develops improved procedures
- Direct and check the work of other hardware design engineers
- Act as internal consultant providing technical guidance on most complex projects
- Oversee the de-processing of electronic components and retrieving stored firmware or software
- using approved reverse engineering procedures
- Develop novel procedures for reverse engineering of new component types

Qualifications:

Twelve (12) years' experience as a HDE in integrated circuit or microelectronic component design or reverse engineering of the same is required. Bachelor's degree in Electrical Engineering or Computer Engineering from an accredited college or university is required. Five (5) years of additional hardware design engineering experience may be substituted for a bachelor's degree.

Experience Description

1) Programming in VHDL (10 years)
2) Programming on Xilinx FPGAs - any combination of VIRTEX-Il Pro, VIRTEX-4, VIRTEX-5, or VIRTEX-6 (8 years)
3) Programming on Linux platforms (5 years)
4) Experience with Xilinx ISE,
5) Synplify Pro, and Modeltech's Modelsim (5 years)

6) Writing pin-level VHDL and clocking constraint files (8 years @, 50%)
7) Programming in one or more of the following scripting languages: PERL, sh, bash, esh, or python (1 year)
8) Using Linux or Unix for day-to-day activities (5 years)