

HIGH PERFORMANCE COMPUTING MODERNIZATION PROGRAM

RESEARCH PROJECT #: HPCMP-HIP-24-036

Commercial Solutions for Classified (CSfC) Investigation for the Defense Research and Engineering Network (DREN) Network of Opportunity Rapid Deployment Kit (NORDK)

About HPCMP:

The DoD High Performance Computing Modernization Program (HPCMP) provides an HPC ecosystem of centers, networking and software for DoD research, development, test, and evaluation as well as acquisition engineering missions. The Defense Research and Engineering Network (DREN) is a component of the HPCMP and provides wide area networking support between HPCMP users and centers. DREN connects over 200 DoD and DoD contractor sites across the US including Alaska and Hawaii. DREN offers a high bandwidth, low latency, low jitter, full service wide area network solution. DREN also offers an ideal platform for next generation network protocol and cyber security research.

RESEARCH LOCATION: Wright-Patterson AFB, OH

PROJECT DESCRIPTION:

The DREN NORDK kit is a mobile equipment stack meant to be deployed to remote US military locations and be connected back to DREN using any circuit of opportunity including geosynchronous or Low Earth Orbit (LEO) satellite services. The NORDK equipment stack currently includes an NSA Type 1 encryptor. Because NORDK is deployed in remote locations, it can be difficult to ship COMSEC accountable equipment and key material where it is needed. This project will investigate the replacement of the Type 1 encryptor with a non-COMSEC accountable solution called CSfC. Using a CSfC solution will make the shipment and use of NORDK kits in remote locations easier.

Under the guidance of a mentor, the intern will:

- Research NSA-approved Commercial Solutions for Classified (CSfC) requirements.
- Identify potential vendors providing software and/or hardware solutions.
- Research required management activities of CSfC solutions including red, gray and black zones.
- Demonstrate a potential CSfC solution in an unclassified environment to provide a proof-of-concept implementation.
- Provide recommendations on a CSfC solution including management approaches for the red, gray and black zones.
- Prepare appropriate documentation including reports, presentations, posters, etc. as needed.

This internship will benefit the intern through involvement in a professional HPC work environment and the opportunity to contribute to a meaningful professional project. The intern will also benefit from professional mentorship and the opportunity to improve communication skills through written reports and oral presentations. The intern will get a sense of work in a DoD environment and potential future opportunities for a professional DoD career.

ANTICIPATED START DATE:

May 2024 – Exact start dates will be determined at the time of selection and in coordination with the selected candidate.

QUALIFICATIONS:

The ideal candidate will be enrolled as undergraduate student in Computer Engineering, Electrical Engineering or Computer Science. Coursework or experience in data networking, Internet fundamentals, cyber security, data encryption, and Windows or Linux configuration is desirable.

ACADEMIC LEVEL:

Degree received within the last 60 months or currently pursuing:

- High School
- Associate's
- Bachelor's

DISCIPLINE NEEDED:

- Computer, Information, and Data Sciences
- Engineering
- Science and Engineering related