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Advancing Energy Security and Environmental Solutions with the NETL

The National Energy Technology Laboratory (NETL), part of the U.S. Department of Energy (DOE) national laboratory system, has a singular and essential mission – to drive innovative solutions to advance an environmentally sustainable and prosperous future for all Americans. To do it, NETL strives to be the nation’s premier energy technology laboratory that delivers integrated solutions. Conducting this research and development through partnerships, cooperative research and development agreements, financial assistance, and contractual arrangements with universities and the private sector is a complex and detailed process.

Challenge:

The efforts of NETL focus a wealth of scientific and engineering talent on creating commercially viable solutions to address national energy and environmental problems. The organization requires a substantial network of capabilities to perform IT support services for 1,800 users and their business processes necessary to operate a national laboratory. NETL faced multiple IT-related challenges including integration of enterprise and research work, retiring technical debt, and preparing IT to meet the challenges of the future. Central to these challenges was

Services Provided:

- High Performance Computing (HPC) design and operations
- Artificial Intelligence/Machine Learning (AI/ML) design and operations
- Integrated ICS and SCADA systems interface and data collection
- Energy Data eXchange (EDX) support



Success Achieved:

- Continuous, 100% Secure, research computing delivery
- Enabling more than 50% of all research completed at NETL
- Achieving more than 90% customer satisfaction rate
- Completion of more than 300 separate projects at NETL



capturing the body of work already in progress and putting it into a project management framework, working out roadblocks such as overcommitments of personnel/resources, deconflicting scheduling issues that would cause escalation of costs or duplication of effort, and creating meaningful reports/metrics that leadership could customize and view to see work status.

Approach:

Maximus has long delivered people, processes, and advanced technologies that enable government to meet mission demands and satisfy the expectations of the citizens it serves. As a trusted partner to dozens of agencies and the largest digital services provider to government, Maximus brought a broad portfolio of integrated tools alongside deep knowledge of leading-edge technologies and partners to support NETL's needs for IT process management and digital transformation.

Maximus worked with the client to establish a world-class Project Management Office (PMO) focused on collaboratively improving the working environment for its users while also retiring years of accumulated technical debt. The Maximus team, comprised of its employees and affiliates, assisted NETL with delivery of key IT solutions, including:

- Established work authorization, control, and reporting methods.
- Integrated disparate operational elements of IT including infrastructure, applications engineering, cyber, and research.
- Enhanced security, system speed, ease of use, and more capability in administrative processes and remote work.
- High Performance Computing (HPC, or supercomputing).
- Collaborative systems that provide secure, remote access through the internet to researchers anywhere in the world.
- Emerging technologies for edge computing including Artificial Intelligence (AI) / Machine Learning (ML) and development and operations of the Energy Data eXchange (EDX).

Results:

Maximus delivered the PMO and workflows for project work execution, which included a fully integrated Jira system that supports development and use of both waterfall and agile project management, resource loaded schedules and accompanying Jira cards and Gantt chart roadmap. To ensure success, the Maximus team developed and refined processes and successfully achieved Capability Maturity Model Integration (CMMI) L3 certification, a model that provides appraisal and training for process improvement, for quality services and software on time and within budget.

In addition, during the contract lifecycle, Maximus and its affiliates (Aeolus Tech and Matric) have designed, built, started, commissioned, and operated a new system for the Energy Data eXchange (EDX), AI/ML cluster, and HPC/supercomputer. Together, these systems enable the completion of greater than 50% of all research conducted at the NETL, one of only 17 Department of Energy national laboratories.

We can empower you to innovate with agility and scale, delivering impactful outcomes and exceptional customer experiences. Learn more at maximus.com/federal.

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