TRAINING AND READINESS ACCELERATOR (TReX)

STATEMENT OF NEED
IN SUPPORT OF
NavalSea Systems Command (NAVSEA) 06L Navy
Model Based Product Support (MBPS) Project

Background

The United States Navy seeks to modernize the current logistic support IT infrastructure and requires a Model-based Product Support (MBPS) system(s) with enterprise and field level capability to effectively and efficiently acquire, field and sustain weapon systems’ digital twin and enable appropriate predictive analysis and modeling tools that can improve material availability and reliability, increase operational availability, and reduce Operation and Sustainment (O&S) cost.

The delivered solution(s) will be part of the MBPS family of integrated systems and must support both ashore and afloat users that are Cyber Secure and auditable. The MBPS services portfolio is composed of Navy Product Data Management (NPDM), Navy Common Readiness Model (NCRM), and Navy Data Acquisition Requirement Tool (NDART).

Navy Product Data Management (NPDM). NPDM is a single, authoritative system baseline, technical data management, logistics product data, change and configuration management service environment to acquire, manage, and sustain technical data packages to include (but not limited to):

- Configuration Management
- Configuration Status Accounting
- Change Management
- Related Artifacts
- 3D Models
- 2D Drawings
- Manufacturing Processes
- Requirements
- Test and Evaluation Processes
- Logistics Product Data/Logistics Product Data Record (LSAR)
- Technical Publications, Training, Navy Engineering and Combat Operational Sequencing Systems
- Bill of Material Management (Engineering/Manufacturing/Service Support)

Navy Common Readiness Model (NCRM). NCRM is an integrated a modeling and simulation-based approach to supportability analysis within the systems engineering process, which enables acquisition programs to design and sustain equipment and logistics service solutions to meet fleet readiness and cost objectives. NCRM also
enables programs to embed readiness at cost models as critical components of the system’s digital twin, which provides the foundation for continuous performance monitoring and enhances decision support services when integrated with enterprise data analytics capabilities. NCRM integrates the following traditional supportability analysis processes / capabilities to develop affordable readiness models:

- Failure Mode, Effects and Criticality Analysis (FMECA)
- Reliability Block Diagram (RBD)
- Multi-echelon Readiness Based Sparing (RBS)
- Level of Repair Analysis (LORA)
- Operational & Sustainment Cost optimization
- R&M Predictions
- Failure Reporting and Corrective Action Systems (FRACAS)

The Navy Data Acquisition Requirements Tool (NDART) will enable Navy program offices to enforce common data standards, requirements and acquisition approaches across all Navy weapon systems acquisition contracts. The high level NDART capabilities will enable the Navy program offices to develop web-based Statement of Work (SOWs), Contract Data Requirements Lists (CDRLs), and Data Item Descriptions (DIDs) for the procurement of technical and product data for a system/platform which will support product support strategies and sustainment of systems throughout the lifecycle.

**Area of Need**

Attachment 1, MBPS Technical Supplement, 6 December 2018, outlines the technical program description and requirements of the prototype(s) based on assumptions of the current state of technology. Vendors are encouraged to challenge these assumptions and articulate any major discrepancies. The government desires that vendors provide additional emphasis on the Log IT Legacy Program Rationalization requirements documented in Section III.D.4., Appendix E, and Section V.

MBPS system(s) must consider afloat and ashore Navy users. Naval operational forces consist of surface ships, submarines, carriers, air wings and detached squadrons, expeditionary forces, and cyber forces operating afloat and ashore. They require the ability to generate and sustain material readiness in all environments, to include while in limited or no communications with the Navy enterprise, where material readiness is defined as enough equipment operating with enough capability to meet standards across various pre-defined warfare mission areas.

The MBPS system(s) will be the principal provider of authoritative product data and a highly scalable affordable readiness analytics platform that will be integrated with the Navy Operational Business Logistics Enterprise (NOBLE) family of systems and Navy Maritime Maintenance Enterprise Solution (NMMES) system.
The Product Data Management and Common Readiness Model capabilities will be developed around Human Centered design (HCD) approaches.

**Solutions We Seek**

The Navy seeks to focus on mission outcomes and the enabling services and data, while allowing technology to be continuously inserted and modernized without disruption to the user community. Figure 1 represents Navy logistics mission outcomes for material and shore readiness and service experience.

![Figure 1: Mission Outcomes](image)

- Reduced failure rate
- Improved repair time
- Improved outfitting and resupply time and accuracy
- Improved facility capabilities and security
- Increased installation operations reliability
- Safeguard personnel performing Operations & Maintenance
- Affordable sustainment
- Simplified and expedited decision making
- Integrated and dynamic work prioritization
- Integrated training and execution
- Digitally enabled social collaboration
- Easy and intuitive user experience/interface

The MBPS system(s) shall be cloud-based and leverage Navy cloud brokers/SecDevOps instances and provide data integration of multiple legacy platforms into a holistic level data environment, accessible via Application Program Interfaces (API) and hosted in a government certified cloud at Impact Level (IL) 4/6.
The cloud environment combined with a common MBPS enterprise system(s) shall provide a highly available and reliable solution. The environment shall be capable of hosting and integrating applications, data, systems and services planned to be transitioned to modern commercial technologies and accomplish this migration of government-owned applications with no degradation of services. Figure 2 represents Navy logistics Enterprise Technical Reference Framework (ETRF).