

# THOMAS BOCK, PH.D.

## Data, Analytics & Operations Research Leader

Hampton, VA | Active **TOP SECRET Clearance** | Fluent in German

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### *AREAS OF EXPERTISE*

#### **Mission Leadership & Strategic Engagement**

- Cross-functional leadership across analytics, systems engineering, integration, and enterprise transformation in DoD, naval, and coalition environments
- Executive stakeholder engagement and decision support, including briefings to senior military leadership (up to 4-star level)
- Strategic planning and mission alignment translating operational needs into data-driven initiatives and enterprise capabilities
- Technical leadership guiding analytics, modernization, and decision-support efforts tied to readiness and mission outcomes
- Integration of analytics, systems engineering, and enterprise data architecture enabling end-to-end mission decision support and operational effectiveness
- Workforce development, technical training, and knowledge transfer across operational and technical communities

#### **Operations Research, Analytics & Decision Support**

- Over 15 years applying quantitative and qualitative analysis across DoD, joint, NATO, and coalition environments
- Operations research methods (DOE, ANOVA, hypothesis testing, SPC) applied to mission effectiveness and system performance
- Development of MOE/MOP frameworks supporting test design, system evaluation, and operational decision-making
- Readiness analytics, capability gap analysis, and course-of-action (COA) development supporting mission planning and execution
- Design of experimental and analytical frameworks for evaluation of complex defense systems and operational scenarios
- Fleet-level and NATO analytics enabling structured planning, reporting, and decision advantage

#### **Systems Engineering, Integration & Enterprise Modernization**

- Full lifecycle systems engineering including requirements decomposition, DoDAF/MBSE architecture, integration, and V&V
- System-of-systems integration and interoperability across distributed mission and enterprise environments
- Legacy system modernization and ERP transformation enabling large-scale enterprise migration initiatives
- Risk Management Information (RMI) system transformation including legacy-to-target integration and deployment
- Enterprise transition planning, implementation, and sustainment supporting operational readiness at scale

#### **Test, Evaluation & Modeling and Simulation**

- Development and execution of developmental, operational, and system-of-systems test strategies aligned with DOT&E standards
- Joint Test & Evaluation (JT&E) support across JTEM, JDI, J-FLaME, and JADE initiatives
- Modeling and Simulation (M&S) supporting mission effectiveness, system performance, and operational validation
- Verification and Validation (V&V) of systems, models, simulations, and integrated environments
- Development of test lifecycle artifacts and analytical reporting enabling structured evaluation and leadership decision-making

### **Enterprise Data Architecture, Engineering & Governance**

- Enterprise data architecture and modeling supporting requirements traceability, system integration, and modernization
- Logical and physical data design using ERwin, IDEFo, and data-flow modeling techniques
- Data governance, metadata management, and data quality frameworks ensuring enterprise integrity and usability
- DoDAF-aligned data architecture enabling interoperability, traceability, and cross-system integration
- Development of scalable ETL pipelines and automated data workflows using SQL, Alteryx, VBA, and enterprise platforms
- RegEx-driven automation pipelines supporting structured and unstructured operational data processing
- Reusable data engineering frameworks improving efficiency, consistency, and scalability of analytics and reporting

### **Business Analysis & Process Transformation**

- Business and systems analysis supporting enterprise modernization and mission system development
- Process mapping, reengineering, and as-is/to-be transformation across operational and enterprise environments
- Requirements engineering, functional decomposition, and stakeholder validation across system lifecycles
- ERP and digital transformation initiatives enabling large-scale organizational change
- Workflow automation and performance management solutions improving efficiency, accuracy, and mission outcomes
- Executive dashboards, performance frameworks, and decision-support systems enabling leadership visibility and performance management