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Resilient by Design – The State of PNT for Defense Operations

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ETI Reports and Studies

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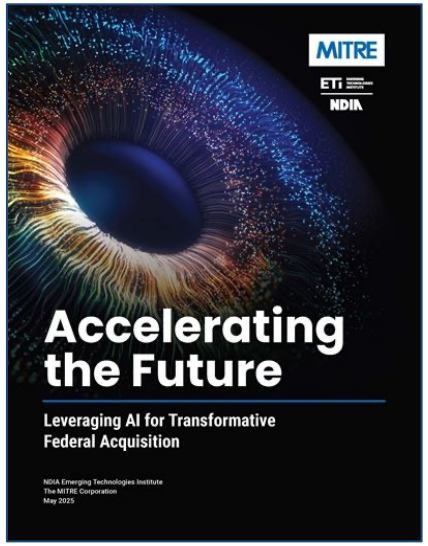

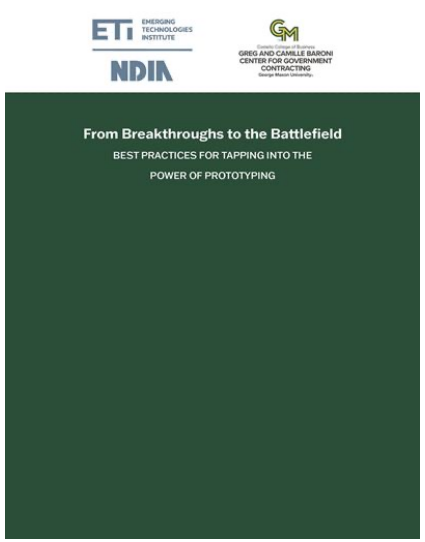

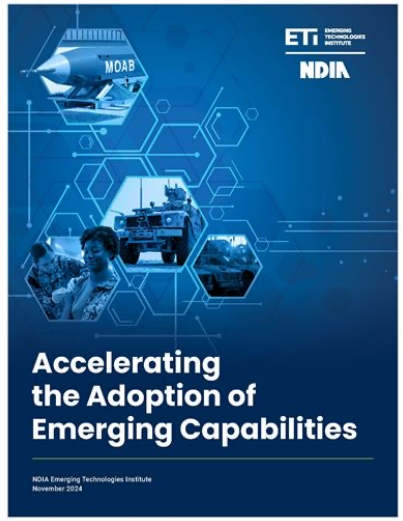

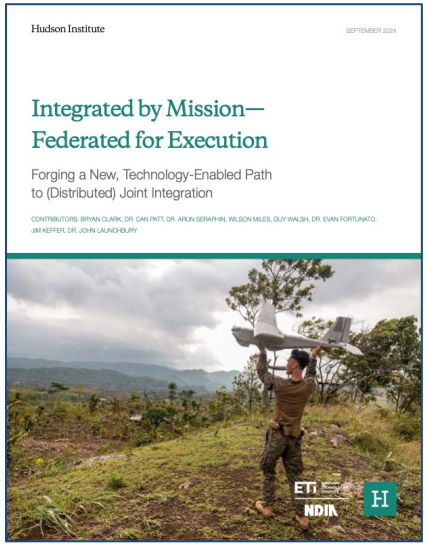

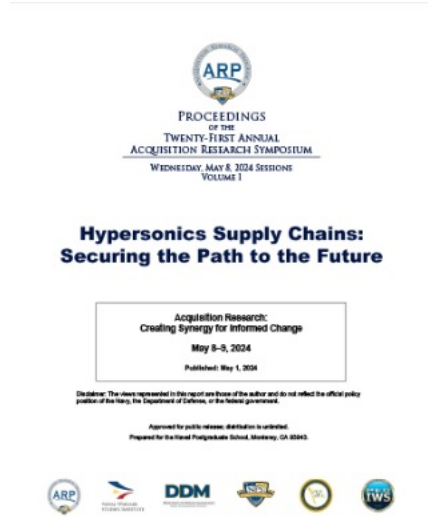

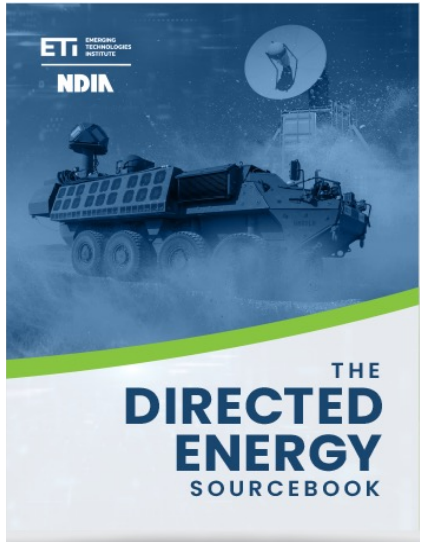

Methodology and Scope

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Scope:

- Establish current landscape of commercial alt PNT services, state of deployment, and strengths/vulnerabilities
- Assess alignment of these products with DoD needs, systems, and business model
  - Can alt PNT services be effectively leveraged for DoD tactical needs? What are the associated advantages and challenges?
  - How can legacy platforms and equipment be integrated with or equipped to use these signals?
  - How does DoD currently engage with the commercial PNT sector? How can this be improved? What concerns might exist regarding the procurement of commercial products and how can these be addressed?
- Provide recommendations to address current challenges faced by the defense industrial base

Methodology:

- Three expert workshops convened around report themes
- Individual interviews
- Independent literature review and research

Workshop Insights

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Themes:

- Commercial PNT services are highly diverse, with a wide range of approaches, use cases, strengths/vulnerabilities, and development timelines
- Ukraine conflict has raised awareness and urgency of resilient PNT
- Current DOD procurement pipelines for PNT are too slow and difficult to navigate
- Alt PNT can provide value by providing a diversity of solutions rather than taking a one-size-fits-all approach

Specific Findings:

- Certain commercial PNT capabilities are viable for defense use today
- Defense and critical infrastructure are the earliest and strongest customers for PNT
- Certification and testing has been a major roadblock in integrating these technologies
- DOD requirements for alt PNT are often outdated before programs are approved
- Government stakeholder coordination has improved since outset of Ukraine war
- Concerns about subscription models for PNTaaS need to be addressed through secure receivers and testbeds
- SB/NT companies find FAR-based contracts inaccessible
- AFWERX/SpaceWERX-type challenges are preferred

Recommendations

- DOD should provide a clear demand signal:
  - Leverage existing commercial SATCOM contracts as models for commercial PNT
  - Expand rapid procurement models (AFWERX/SpaceWERX challenges, IDIQ service contracts)
- Establish a centralized test and certification facility for PNT
- Ensure requirements are tailored to a specific mission or system

- Direct implementation of MOSA architectures to enable integration of multiple commercial PNT inputs without redesigning platforms
- Develop public-private partnerships to encourage VC investment and accelerate constellation deployment timelines
- Review and expand export control exemptions for critical technologies

Next Steps

- Expected review timeline: through 9/23
- Input and feedback from audience is welcomed
  - Email akim@ndia.org