



# U.S. ARMY COMBAT CAPABILITIES DEVELOPMENT COMMAND GROUND VEHICLE SYSTEMS CENTER

Ground Systems Assurance and Tools (GSAT)  
MDEX Brief

24 APRIL 2024

Presented by: :

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POC:

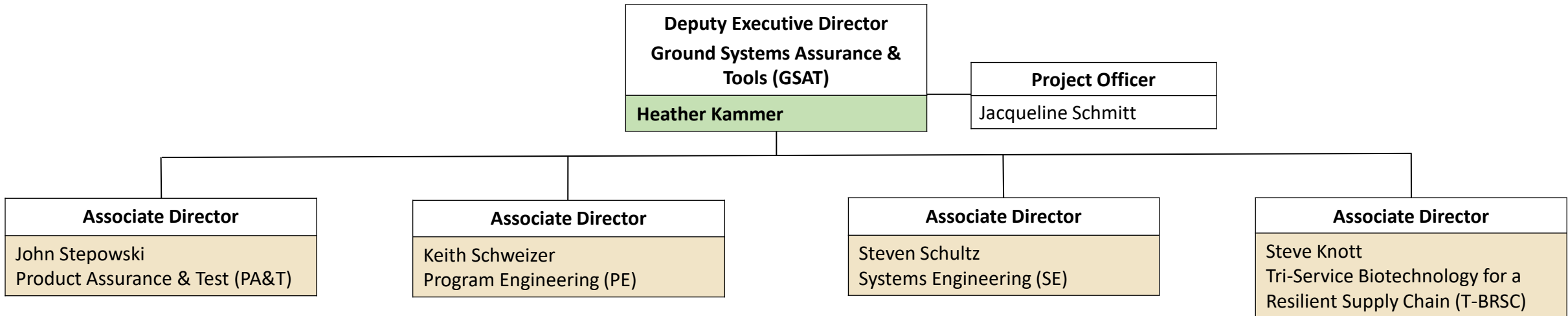
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# GSAT OVERVIEW



*PROVIDE LIFECYCLE ENGINEERING SERVICES TO ENABLE THE DEVELOPMENT, PRODUCTION, AND SUSTAINMENT OF ARMY GROUND VEHICLE SYSTEMS*



  
 DoD INSTRUCTION 5000.97  
 DIGITAL ENGINEERING

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**Originating Component:** Office of the Under Secretary of Defense for Research and Engineering  
**Effective:** December 21, 2023  
**Releasability:** Cleared for public release. Available on the Directives Division Website at <https://www.esd.whs.mil/DD/>.  
**Incorporates and Cancels:** Department of Defense Directive 5000.59, "DoD Modeling and Simulation (M&S) Management," August 8, 2007, as amended  
**Approved by:** Heidi Shyu, Under Secretary of Defense for Research and Engineering

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**Purpose:** In accordance with the authority in DoD Directive 5137.02, this issuance establishes policy, assigns responsibilities, and provides procedures for implementing and using digital engineering in the development and sustainment of defense systems.



# DURABILITY TEST LAB



Realistic...

- Operations
- Vibration
- Terrain
- Environment
- Sensor stimulation



...that are ...

- Precise
- Repeatable
- Controlled
- Measured
- Documented

**THE REALITY OF THE FIELD...**

**...THE PRECISION OF THE LABORATORY!**



# PARTNERSHIP OPPORTUNITY: TEST SERVICES AGREEMENT



## Testing for Industry



GVSC can support industry partners in their efforts to validate entire systems, vehicle subsystems, and component designs.

### Steps:

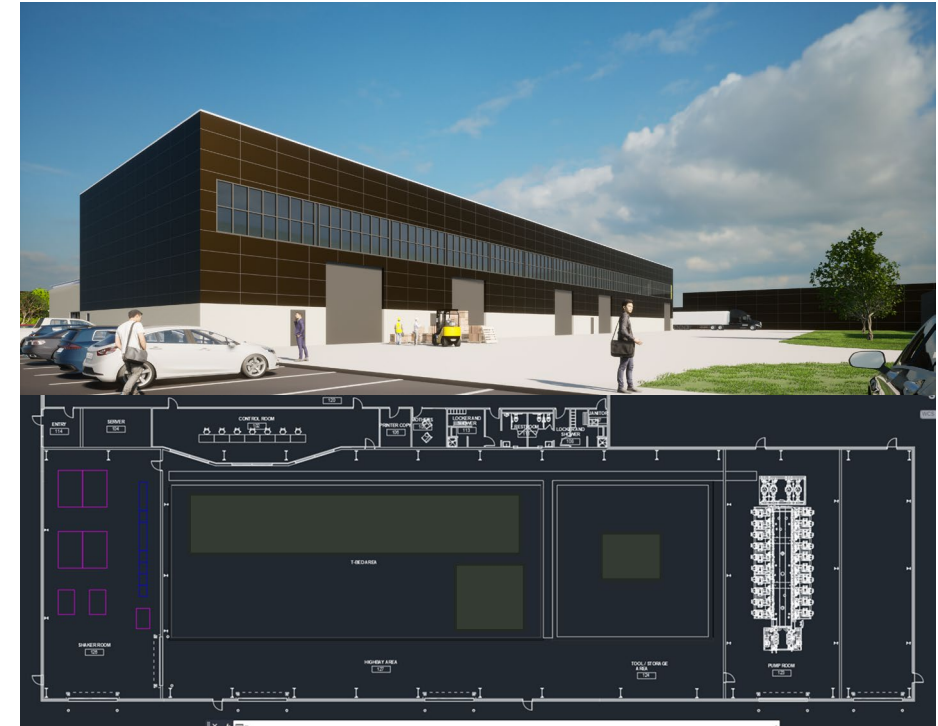
- Work technical details with GVSC lab
- Construct a Test Service Agreement (TSA) to cover all execution requirements, cost, and data handling
- Review by industry partner and GVSC legal
- Agree and sign TSA terms
- Send check for total amount of testing
- Test execution and reporting

### Can Support:

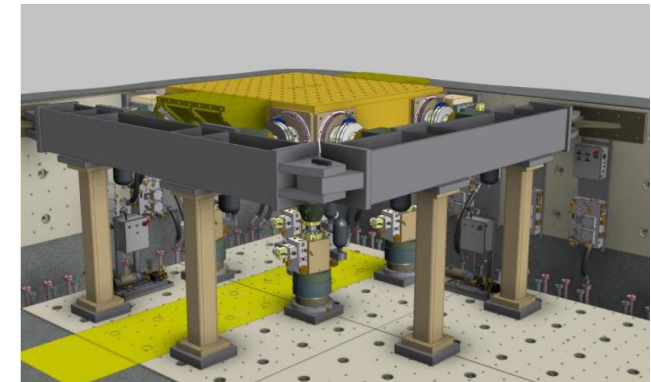
- Engineering changes
- Corrective actions
- Source Approval Requests (SARs)
- Prototypes

### Coming in FY26:

- \$72M MILCON – 32,000 sq ft Combat Vehicle Reliability Lab
- Flagship capability: custom 6-degree of freedom (DoF), high capacity, high frequency vibration rig.



Combat Vehicle Reliability Lab preliminary rendering and layout



Preliminary 6 DoF rig rendering

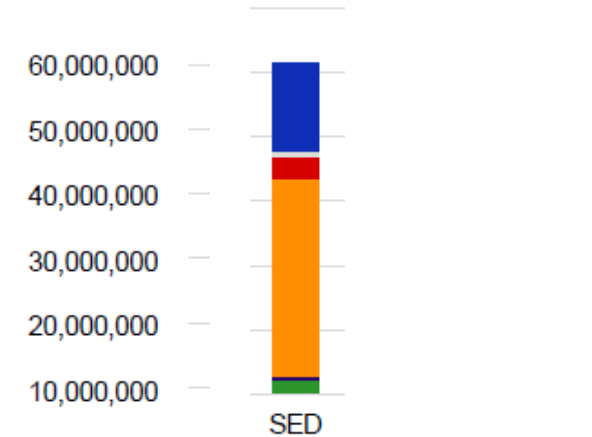
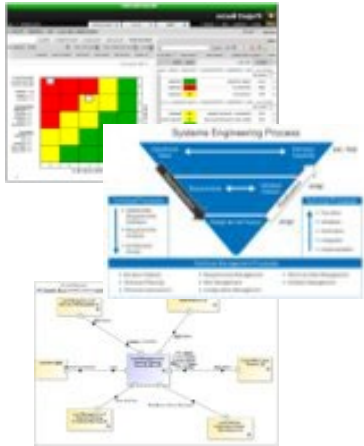
# SYSTEMS ENGINEERING / DIGITAL ENGINEERING



**Focused on Systems Engineering Competency Workforce Development**

- ~240 total engineers and technicians supporting our local partners
- \$50M+ total executed in FY23

- Risk Management • Technical Readiness Assessments
- Requirements Engineering • Mission Engineering
  - Engineering Certification / Materiel Release
  - Military Standardization (Domestic & International)
- Systems Architectures (MBSE) • Systems Engineering Technical Reviews
  - SE Tools (i.e. Project Recon, MagicDraw, Honeycomb, etc.)
- Digital Engineering • Systems Engineering Lead Engineers



# TECHNOLOGY FOCUS AREA: DIGITAL ENGINEERING



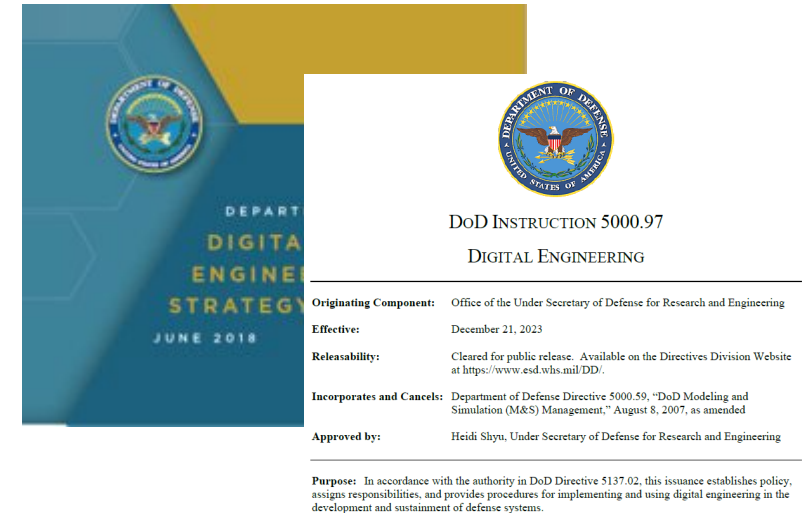
## Technical Challenges

1. Workforce Development
2. Tools & Infrastructure
3. Model Based System Engineering Experience (Modeler vs Architect)

## Investment Strategy / Partners

### Existing GVSC Contracts FY23/24

- CTMA-National Center of Manufacturing Sciences: \$13.1M for Digital Environment Demonstration & Workforce Development.
- TORCH SBIR: \$6.5M for maturing M&S and Live, Virtual, Constructive capabilities in support of Soldier Touchpoints.
- DTIC IAC MAC - SAIC: \$8.2M to integrate M&S, Virtual Prototyping, and SIL capabilities through digital threads.
- Wichita University Cooperative Agreement: \$5.6M to Waltonen to create Digital Twins in support of Advanced Manufacturing
- DTIC IAC MAC – Booz Allen Hamilton & SAIC: Annually funded. Systems Engineering Deliverables.



Booz | Allen | Hamilton®



OPSEC # 8533





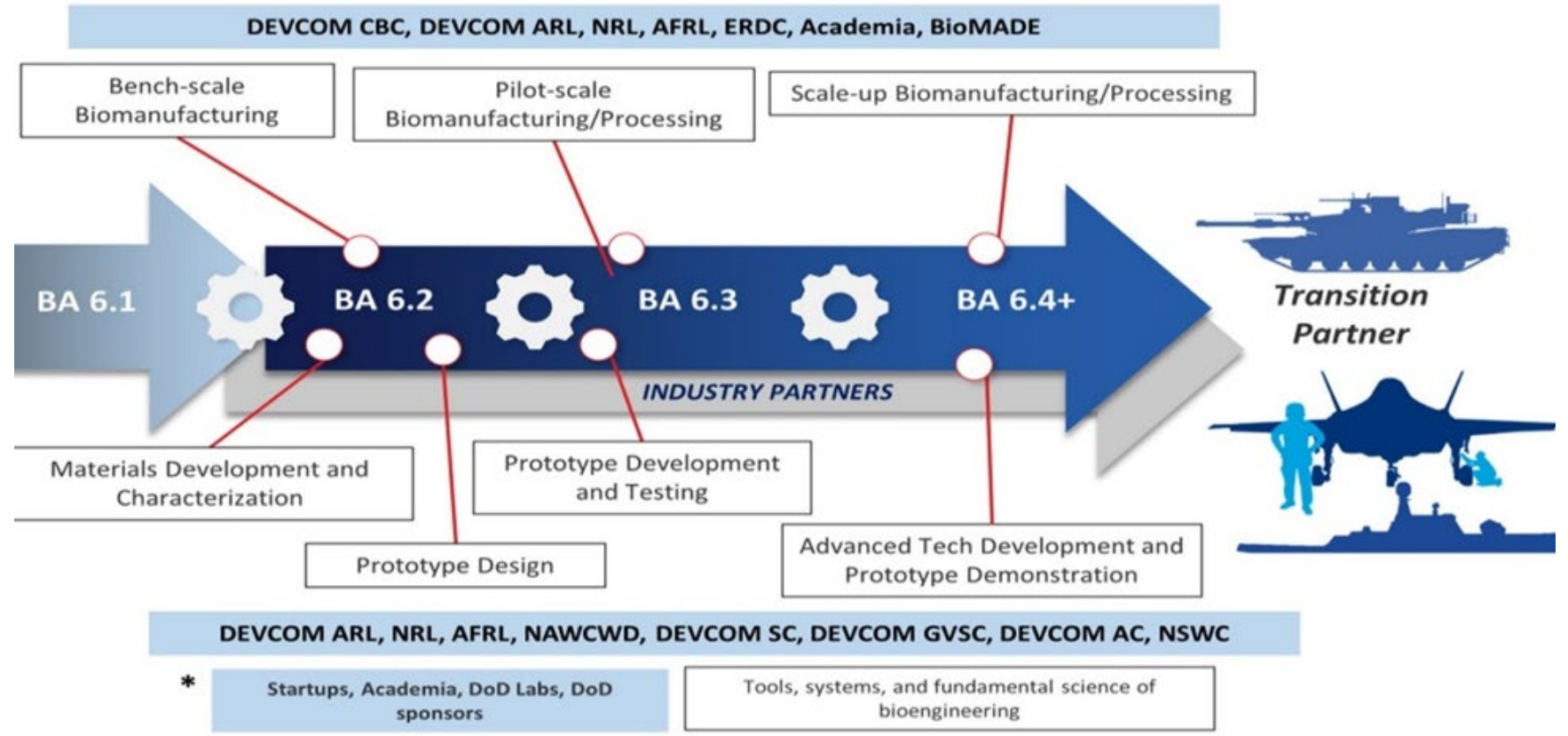
# T-BRSC SUPPORTS THE DOD BIOMANUFACTURING DEVELOPMENTAL PIPELINE

## T-BRSC Vision

Develop a pipeline for advanced development and transition of biomanufactured materials for defense supply chain resilience

## T-BRSC Strategic Goal

Resilient and diversified global supply chains and trade, U.S. and allied competitiveness and leadership globally







# T-BRSC PROJECT PORTFOLIO

## Enhanced Capabilities

Hypersonics



High-performance Resins



Laser Eyewear Protection

## Reduced Logistics



Hypersonic Fuels



Point of Need



Fermentation

## Infrastructure Modernization



Digital Signal Processing



Fermentation

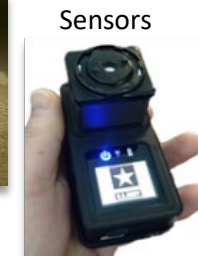


Data

## Cost-saving



Rare Earth Elements



Sensors



Green Solvent



Non-Hazardous Solvent



# INTERESTED IN MEETING?



***GSAT WILL HAVE A ONE-ON-ONE TABLE AVAILABLE FOCUSED ON:***

***SYSTEMS ENGINEERING / DIGITAL ENGINEERING***

***AND***

***PRODUCT ASSURANCE AND TEST***

***TABLE #8 IN CLASSROOM 144***