expression

Infinite Intelligence **Trusted Agentic Al** DISA TEM

June 10, 2025

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Expression Networks – Who We Are



Founded in 1997, headquartered in Washington DC



#1 Washington Technology's Fastest Growing Small Business - 2018 Inc 5000 fastest growing US company – 2018 (#1800), 2019 (#1254) 2020 (#37) 2021 (#227) 2022 (#95) 2023 (#78)

Our Capabilities/Expertise









Agentic Al – Al Agents Meet LLMs



*L(Language) / V(Vision) / M(Multimodal) / R(Reasoning)

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Mar 2016 – AlphaGo defeated Lee Sedol



Oct 2018 – Al artwork *Belamy* sold for \$432K

GenAl



Nov 2022 – ChatGPT Launched



Apr 2023 – AutoGPT went viral

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Agentic Al – Transformative Impact From National Security to Everyday Life



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Agentic Al – the Multi-Agent Surge



*L(Language) / V(Vision) / M(Multimodal) / R(Reasoning)

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Specialized agents

- **Nonlinear workflows**
- Communication protocols
- Challenges to ensure trust • and human oversight

GenAl



Trusted Agent AI (TAA) – The Core Idea

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Adversaries





- 5-role agent team: *"Double-Lock"* - Evaluator Check & Adversary Probe
- Two-tied transparency: Active & Passive
- Adjustable oversight: Hands-on, Balanced, & Autopilot



TRUST – Built-In, Not Bolted-On

- Transparent: Active (push alerts) & Passive (provenance logs, performance stats, on demand)
- <u>Reliable: Only artifacts passing the Double-Lock proceed</u>
- <u>Unassailable</u>: Adversarial red-teaming and IL5/6 controls
- <u>Scalable: Modular architecture</u>
- Testable: Maturity models and adversarial testing



Science-Backed, Practice-Proven

- Multi-Agent Orchestration: Mature research (multi-agent systems, BPM) and frameworks (LangGraph, MCP)
- Ensemble Learning: Increase accuracy and confidence, minimize single-point failure
- Actor-Critic Design: Actors (Responders), Critics (Evaluators), continuous improvement
- Adversarial Learning: From GAN-inspired Adversaries to broader adversarial learning regimes for stress-testing



Use Case 1 – Acquisition Management (AM) Transform Acquisition for Warfighter Advantage

Pain Points

High Volume of Labor-Intensive Tasks

Lack of Standardization and Built-In Compliance



SBIR D2P2 Project funded by Army PEO Enterprise

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TAA – AM Outcomes

Increased Efficiency: Reduce Cycle *Time* and Operational *Cost*

Enhanced Efficacy: Ensure Consistency and Compliance



Why Existing GenAl Tools Still Fail No End-to-End Packages You Can Trust

• Fragmented point-solutions: unable to orchestrate a single, end-toend, compliant Acquisition Requirements Package (ARP)

 No build-in trust: acquisition staff must manually verify every artifact eroding time savings



Use Case 1 Demo

Intuitive and Tailored UI/UX with Real-Time Insights

VOR		
Search		
Home		What can I help you with tod
Documents Projects		Set up a new acquisition folder with guided pro
ject Folders + New Folder ∃ 2025_InfrastructureU		
ClientAcquisition_Sol		Your Recent Projects
	•	CyberSecurityEnhancement Last Opened: February 1, 2025 View Summary
		Your Recent Documents
		Document Title
		Market Survey
		Quality Assurance Surveillance F
		Performance Requirements Sum
		Justification & Approval
		Notes to Contracting Officer
☐ Start New Task		

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Example – Generate Full PWS (Performance Work Statement) With 1/10 of Human Hours

Performance Work Statement (PWS) for the AI-Enabled Procurement System in Defense.

PART 1 – GENERAL INFORMATION

1.1 Purpose The purpose of this Performance Work Statement (PWS) is to meticulously define the requirements for the development, implementation, and maintenance of an AI-Enabled Procurement System within the Department of Defense (DoD). This system shall revolutionize the DoD's acquisition processes by leveraging cutting-edge artificial intelligence (AI) technologies, specifically Natural Language Processing (NLP) and Machine Learning (ML), to enhance efficiency, accuracy, and compliance in procurement operations.

The AI-Enabled Procurement System shall address critical challenges in the current DoD acquisition landscape, including but not limited to:

- 1. Streamlining the evaluation of complex proposals
- 2. Enhancing compliance screening across diverse regulatory frameworks
- 3. Optimizing decision-making processes through data-driven insights
- 4. Reducing procurement cycle times while maintaining rigorous quality standards
- 5. Improving cost-effectiveness and resource allocation in acquisition activities

The contractor shall develop a comprehensive solution that integrates seamlessly with existing DoD procurement systems and workflows, while providing a scalable platform for future enhancements. This system must adhere to the highest standards of security, as outlined in the DoD Cybersecurity Reference Architecture, to safeguard sensitive procurement data and maintain the integrity of the acquisition process.

The successful implementation of this AI-Enabled Procurement System shall directly support the DoD's strategic objectives for modernization and digital transformation, as outlined in the DoD Digital Modernization Strategy. It shall enable the DoD to make more informed, data-driven procurement decisions, reduce administrative burdens on acquisition professionals, and ultimately enhance the department's ability to equip and support warfighters with cutting-edge capabilities in a timely and cost-effective manner.

1.2 Background The Department of Defense (DoD) acquisition process is a complex, multifaceted system responsible for procuring goods and services essential for national defense. Historically, this process has been characterized by lengthy procurement cycles, intricate regulatory compliance requirements, and resourceintensive evaluation procedures. These challenges have often resulted in delays in capability delivery to warfighters and suboptimal resource utilization.

In recent years, the rapid advancement of artificial intelligence (AI) technologies has presented unprecedented opportunities to transform and modernize government operations. Recognizing this potential, the DoD has prioritized the integration of AI across various domains, as outlined in the DoD Artificial Intelligence Strategy. The procurement sector, given its critical role in supporting defense capabilities, has been identified as a key area for AI-driven innovation.

Several factors have contributed to the urgent need for an AI-Enabled Procurement System:

- 1. Increasing complexity of defense acquisitions: Modern defense systems often involve intricate technologies and supply chains, requiring sophisticated evaluation methodologies.
- 2. Evolving regulatory landscape: Procurement professionals must navigate a constantly changing regulatory environment, necessitating tools that can quickly adapt to new compliance requirements.
- 3. Data-driven decision making: The DoD's commitment to leveraging data as a strategic asset, as emphasized in the DoD Data Strategy, demands more sophisticated analytics capabilities in the procurement process.
- 4. Cybersecurity concerns: The increasing digitization of procurement processes has heightened the need for robust security measures to protect sensitive acquisition data from cyber threats.

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Human Effort: 1 person, 1-2 days

TAA – AM Prototype:

< 1 hour, < 5\$



Example – Generate RSCA (Request for Service Contract Approval) Check PWS Compliance without Lengthy Wait

REQUEST FOR SERVICES CONTRACT APPROVAL FORM

Project Name for Contract/Task C				
Name of HQDA Principal, Army Comman				
Dates and Cost o	fRe	quested Period of Per	forma	
Base Year Cos	t	Option Year 1 Cost	Opti	
CMEs		Labar Cast for Dorne	- (- 1)	
CMES		Labor Cost for Reque	stea	
3) Has this mission been mandated by reg 4) In the event that this contract is not aw ACC				
sign or initial		I approve and ce	rtify 1	
 this req in the c special this req this req this req written this cor a) b) c) d) 5) the wor has bee sufficie are avai work pr 	uirer ase (cons uirer or ir htrac) has) has) has ckloa n do ently ilabl rodu	ment does not include of work closely associ- sideration has been giv- ment does not include a the way the contract t (check the applicabl been reported in the C not been reported in the C not been reported in the CMRA reporting requ- not been reported in the d for this requirement cumented in the Pane trained and experience e within the agency to ct.	e inhe iated ven to opera e box Contr CMR uirem CMR t has 1 for 1 ced of o man	

Name / Rank / Position

Worksheets prepared by:

Signature:

October 2014, Version 1.1

For Official

WORKSHEET A (1 OF 3) INHERENTLY GOVERNMENTAL FUNCTIONS

An "inherently governmental function" is one that has been determined to be—through statute or otherwise—a function that must be performed by Government personnel, either civilian or military, and may not be performed by a contractor. All the sections of Worksheet A must be filled out and are designed to help determine whether or not a function is inherently governmental in nature.

Read each question and apply it to the function in question. Answer "Yes" or "No" to the questions that apply below, based on the work statement and the way the contract is performed. A "Yes" response to any of the below indicates that the function must be performed in-house and may not be contracted.

	Inherently Governmental
	Does the function:
1	Involve contractors providing legal advice and interpretations of regulation Government officials?
2	Involve the direct conduct of criminal investigations?
3	Involve the control of prosecutions and performance of adjudicatory functories relating to arbitration or other methods of alternative dispute resolution?
4	Involve the command of military forces, especially the leadership of milit members of the combat, combat support, or combat service support role?
5	Involve the conduct of foreign relations and the determination of foreign
6	Involve the determination of agency policy, such as—among other things and application of regulations?
7	Involve the determination of Federal program priorities for budget reques
8	Involve the direction and control of Federal employees?
9	Involve the direction and control of intelligence and counter-intelligence
10	Involve the selection or non-selection of individuals for Federal Governm including the interviewing of individuals for employment?
11	Involve the approval of position descriptions and performance standards f
12	Involve the determination of what Government property is to be disposed (although an agency may give contractors authority to dispose of property ranges and subject to other reasonable conditions deemed appropriate by
13	Involve:
	i) Determining what supplies or services are to be acquired by the Govern may give contractors authority to acquire supplies at prices within specific other reasonable conditions deemed appropriate by the agency);
	ii) Participating as a voting member on any source selection boards;
	iii) Approving any contractual document, including documents defining replans, and evaluation criteria;

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	YES	NO
ons and statutes to		
tions other than those		
tary personnel who are		
policy?		
-determining the content		
sts?		
operations?		
nent employment,		
for Federal employees?		
l of and on what terms y at prices within specified the agency)?		
nment (although an agency ed ranges and subject to		
equirements, incentive		

Human Effort: 1 person, 1-2 hours (only if you get to it!)

TAA – AM Prototype: < 5 minutes, < 1\$

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Example – Generate AT/OPSEC (Anti-Terrorism/Operations Security) Provide Explainable and Transparent Decisions

Requirement

- 1. AT level 1 training (general)
- 2. Access and general protection policy and pro
- 2a. For contractor requiring Common Access C
- 2b. For contractor not eligible for CAC but requ
- 3. AT awareness training for US based contract
- 4. iWATCH Army training

5. Army Training Certification Tracking System employees who require access to government

6. For contracts that require a formal OPSEC pl

7. Requirement for OPSEC training

8. Information assurance/information technolo

- 9. Information assurance/information technolo
- 10. Contractor Authorized to Accompany the Fe
- 11. Contract requiring performance or delivery
- 12. Handling or access to classified information
- 13. Controlled Unclassified Information (CUI)

7. OPSEC Training?

- Answer: Yes
- Confidence Level: Medium (Reasonable precaution)

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	Human Answer	Al Answer
	<mark>Yes</mark>	<mark>Yes</mark>
ocedures	<mark>Yes</mark>	<mark>Yes</mark>
Card (CAC)	No	No
ires access to DoD facility or installation.	<mark>Yes</mark>	<mark>Yes</mark>
tor personnel traveling overseas	No	No
	<mark>Yes</mark>	<mark>Yes</mark>
(ATCTS) registration for contractor information systems.	Νο	No
rogram.	No	No
	No	Yes
ogy training	No	No
ogy certification	No	No
orce clause	No	No
in a foreign country	No	No
n	Νο	No
	No	No

Reference PWS: 88th Protective Clothing (W911SA-20-Q-3111)

Justification: Baseline OPSEC training prevents contractors from accidentally exposing sensitive Army data





Use Case 2 Demo – Multi-Source Intelligence From Disparate Data into Actionable Targets in Minutes

X VOR
Q Search
A Home
Reports
Analytics
Projects ^
Project Folders + New Folder
Operation Iron Shad
Project Silent Echo:
Task Force Phantom
🖻 Code Blackout: Clas
Task Threads + New Task
□ Suspicious Calls Link
Unregistered Supply
Decrypting Unidentif
□ Insider Threats in Hi
□ Investigating Rogue
□ Activity at Checkpoi
☐ Start New Task



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What can I help you with?

earch or type a command			Ø
Investigative Assistant	Z Tolls Analysis	Reports Generation	

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Questions?

