SYSTEMS ENGINEERING RESEARCH CENTER | AIRC ACQUISITION INNOVATION RESEARCH CENTER | SERC RESEARCH REVIEW 2026

Digital Acquisition Roadmap and Strategy

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Progress through Workshops

- February 20, 2025: AIRC-sponsored workshop to start the crafting of a roadmap for digital transformation of Acquisition
  - Resulted in initial structuring of the roadmap into 5 lines of effort
- May 14: second workshop to start gathering research activities
- July 17: third workshop - initial roadmap lines of effort published
- Aug 28: fourth workshop – deeper dive on LOE A: Adopt a data-driven strategy, and LOE B: Redefine Workflows
- Sep 17: draft roadmap – “AIRC Digital Acquisition Roadmap Executive Overview - Steps for Improving Acquisition”

Synergy with WRT-2510: DEPARTMENT OF THE AIR FORCE (DAF) DIGITAL MATERIEL MANAGEMENT (DMM) DATA-DRIVEN METHODS, POLICIES AND SOLUTION ARCHITECTURES

Digital Acquisition Roadmap Vision

- Digitization, Digitalization, and Digital Enablement are not equivalent.
- Digital Transformation does not have a start and finish.
- Creating machine-readable and machine understandable data reduces sequential information translation.
  - Provides foundation for automation, inclusion of agentic AI, and eases translation burden for domain SMEs
- Repeatable digitalized patterns of process and connection across data and models can be applied to business systems.
  - Improves traceability, integrates models and methods across organizational functions and processes, enables automation of reusable patterns
- Digitalizing decision capture in the models promotes parallel discovery instead of sequential gatekeeping

Our goal –

"Radically *accelerate* fielding, sustainment, and modernization"

How –

Eliminate serial processes, inadequate teaming, and lifecycle and functional stovepipes.

Through What –

Models, structured data, and infrastructure to enable digitally enabled collaboration across functions

McKinsey: Building the Foundations for agentic AI at Scale

DIGITIZE
Convert to digital format

Convert existing artifacts to digital form: PDF, spreadsheets, images, etc.

DATA, INFORMATION

DIGITALIZE
Conduct processes digitally

Create new processes and workflows leveraging digital tools and capturing data in machine readable structures from the outset

PROCESS, WORKFLOW

DIGITALLY ENABLE
Create new capabilities

Use digital technologies, machine-readable data, and digitalized workflows to create new capabilities, business models, and value propositions

CAPABILITIES, TECHNICAL

DIGITALLY TRANSFORM
Fundamentally change organizational business

Use digital technologies, data, and models to fundamentally change how organization operates*.

ENTERPRISE, ECOSYSTEM

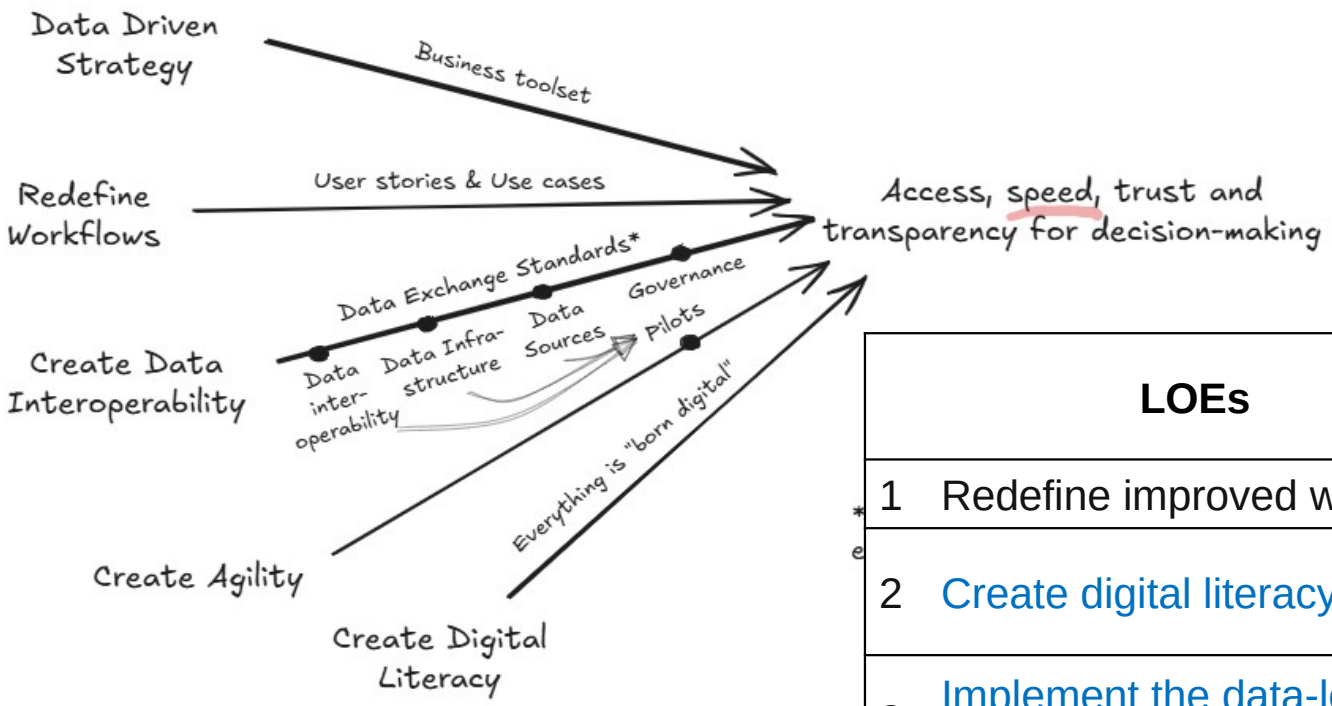
Step 3: Ensure that data quality is in place.

Step 1: Identify high-impact workflows to "agentify."

Step 2: Modernize each layer of the data architecture for agents.

Step 4: Build an operating and governance model for agentic AI.

Roadmap Lines of Effort



LOEs		Elements				Goal
		Now	*Phase I*	*PhII*	*PhIII*	
1	Redefine improved workflows	*User stories & use cases* ——>				Access, speed, trust, and transparency for decision making
2	Create digital literacy	*Competency guides, training, and lessons learned* ——>				
3	Implement the data-level strategy	*Business toolsets* ——>				
4	Create data infrastructure interoperability	*Data interoperability standards, infrastructure, & governance* –>				
5	Drive agility in transformation	*Philosophies and enablers* ——>				
6	Pilot in an acquisition program	*Apply, learn, and scale* ——>				

Digitally-Enabled Acquisition: IP Example

At the May 17 roadmap we “went deep” into two areas, logistics and IP, to derive some of the needed activities for digitalization in their functional areas. We used this “logic model” format. The activities were used in the Roadmap LOEs.

(Current Practice)	(What to do)	(What these produce)	(What changes)	(Measurable)
• No clear understanding regarding DoD IP needs for lifecycle & cross- functional effectiveness • No current visibility regarding what IP access exists, where, how others can access discoverable and shareable way across program lifecycles and functions. • Do not have model or exemplar special and negotiated licenses (SNL) that fit various, critical use cases and contexts • Wasted time in	• Describe critical use cases to clearly capture the “why” and “what for” regarding DoD IP needs • Create a repository of DoD purchased IP/ IP-related entities • Create mechanism for discovery and access to data identified in repository (federated or other structure; discovery could be AI-enabled) • Identify IP-as-a-Service models suitable for various contexts, how this would manifest in contracts, discovery, and access	• Library of SNL exemplars (draft contract language) • Living, auto-populated repository/ virtual data base of IP for visibility and access across DoD • Adaptive and digitalized process for managing IP to meet operational needs • Tools, built on open standards and able to exploit linked-data, to enable these activities.	• Fast and efficient discovery of the “right” IP information when needed • Streamlined access to IP-related data to meet use needs and any required access control • Dynamic access model for IP-as-a-Service, especially regarding use characteristics and cost-effectiveness • Streamlined, tailored contracting to meet DoD IP use needs and ensure appropriate discoverability and access	*DoD has cost-effective, clear, and known access to the IP data it needs, that it licensed, when it needs it to ensure operational effectiveness and readiness:* • Reduce rework and cost renegotiation and time associated with discovery and access of IP already licensed or owned by DoD • Clear, shared understanding regarding DoD rights and what constraints exist via contract • DoD decision makers know where and how

Partnership with AFMC Digital Material Management

Lines of Effort	Steps		
	Near-Term (6–12 months)	***Mid-Term***	***Longer Term***
3. Implement the data-level strategy	• Next-generation CDRLs & DIDs (in progress with DAF DMM) • Pilot AI/ML tools • Implement governance for data exchange	• PM/enterprise software suites • Digital Marketplace for operational data • Develop a market structure to connect demand (use cases) and supply (data)	• *as-a-Service* models (XaaS) • Digital leadership, organization, and change management operating strategy • Economic analysis of DoD investment in digital ecosystems • Processes and standards for authority, validation, and trust • Security and access control
4. Create data interoperability in digital infrastructure	• API-driven workflows (in progress) • Data interoperability standards that support AI-augmented connectivity • Create enterprise-wide digital ecosystems across the services and agencies. • Manage the digital infrastructure: dedicated funding and roles to manage deployment infrastructure	• Ontological basis for data models specific to domain to connect disparate data sources • Linked data standards to connect data and processes • Semantic standards to share and compare data and models	• Enforce standards in the DoD Data Strategy

Create digital literacy

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2. Create digital literacy
• Create project-based learning programs • Continuously train digital literacy and digital competencies • Train in digital acquisition pilots
• Digital Leadership framework and training • Build Cognitive Assistants to augment human decisions
• Consistent, empowered CDAO role across enterprise segments • Specialized hiring authorities • Continuously train agile/DevOps • Continuous project-based training

