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

Department Of The Air Force (DAF) Digital Materiel Management (DMM) Data-Driven Methods, Policies and Solution Architectures

WRT 2510

Department Of The Air Force

Mark Blackburn, Megan Clifford, Tom Hagedorn, Tom McDermott, Valerie Sitterle, Phil Zimmerman

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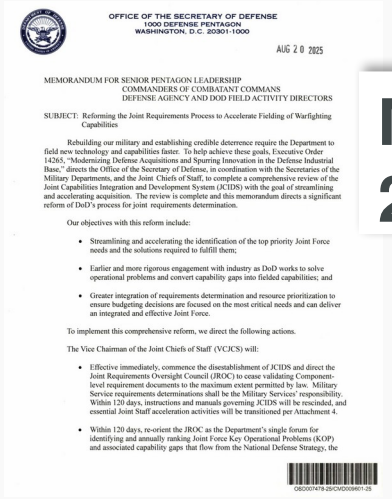
Digital Material Management



OFFICE OF THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-1000

AUG 20 2025

MEMORANDUM FOR SENIOR PENTAGON LEADERSHIP
COMMANDERS OF COMBATANT COMMANS
DEFENSE AGENCY AND DOD FIELD ACTIVITY DIRECTORS

SUBJECT: Reforming the Joint Requirements Process to Accelerate Fielding of Warfighting Capabilities

Rebuilding our military and establishing credible deterrence require the Department to field new technology and capabilities faster. To help achieve these goals, Executive Order 14265, "Modernizing Defense Acquisitions and Spurring Innovation in the Defense Industrial Base," directs the Office of the Secretary of Defense, in coordination with the Secretaries of the Military Departments, and the Joint Chiefs of Staff, to complete a comprehensive review of the Joint Capabilities Integration and Development System (JCIDS) with the goal of streamlining and accelerating acquisition. The review is complete and this memorandum directs a significant reform of DoD's process for joint requirements determination.

Our objectives with this reform include:

- Streamlining and accelerating the identification of the top priority Joint Force needs and the solutions required to fulfill them;
- Earlier and more rigorous engagement with industry as DoD works to solve operational problems and convert capability gaps into fielded capabilities; and
- Greater integration of requirements determination and resource prioritization to ensure budgeting decisions are focused on the most critical needs and can deliver an integrated and effective Joint Force.

To implement this comprehensive reform, we direct the following actions.

The Vice Chairman of the Joint Chiefs of Staff (VCJCS) will:

- Effective immediately, commence the disestablishment of JCIDS and direct the Joint Requirements Oversight Council (JROC) to cease validating Component-level requirement documents to the maximum extent permitted by law. Military Service requirements determinations shall be the Military Services' responsibility. Within 120 days, instructions and manuals governing JCIDS will be rescinded, and essential Joint Staff acceleration activities will be transitioned per Attachment 4.
- Within 120 days, re-orient the JROC as the Department's single forum for identifying and annually ranking Joint Force Key Operational Problems (KOP) and associated capability gaps that flow from the National Defense Strategy, the

OSD007478-25/CVD009601-25

Memorandum for Senior Pentagon Leadership, 20 Aug 2025: "*Accelerate* fielding of warfighting capabilities"

Why.



Digital Materiel Management (2023):
"Radically *accelerate* fielding, sustainment, and modernization"

How –

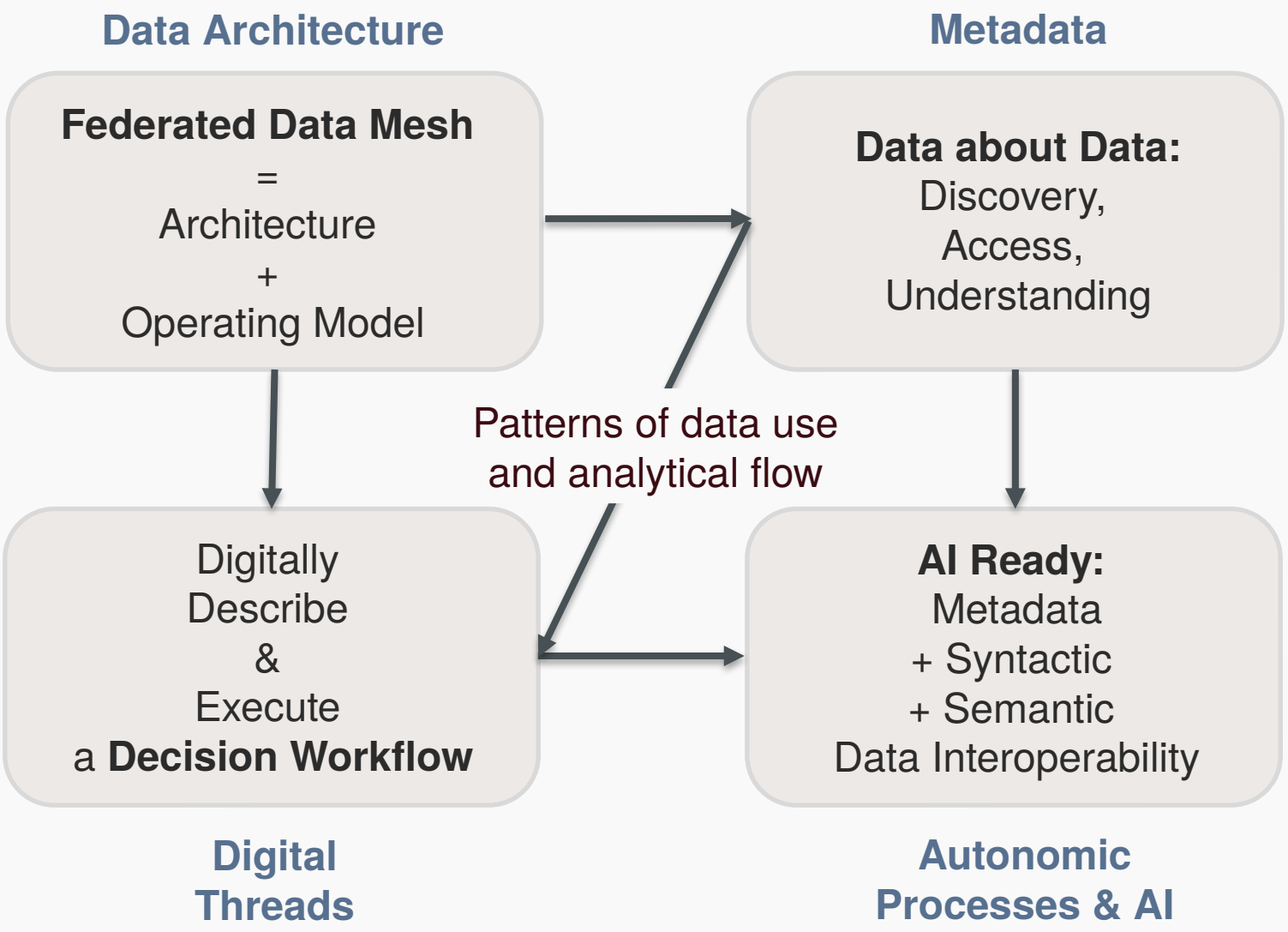
Eliminate serial processes, inadequate teaming, and lifecycle and functional stovepipes.

Through What –

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

DMM is now an ingrained concept for the USAF

Data-Centric DMM



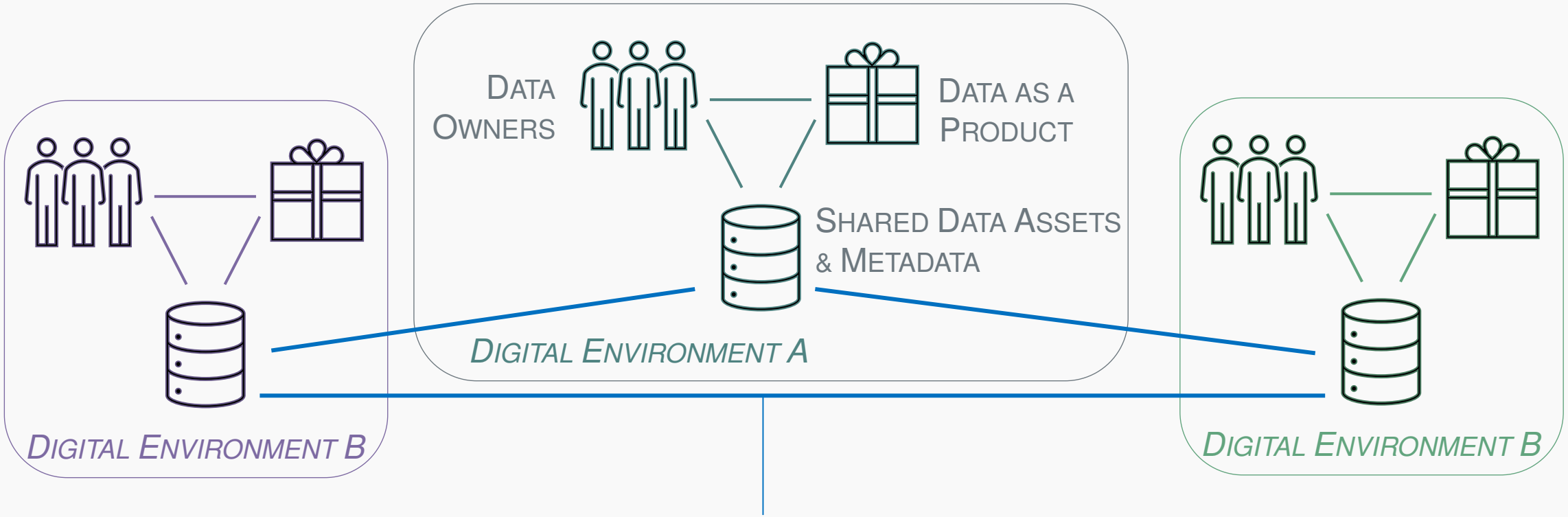
– Digitally Enabled –

Being able to do entirely new things across a heterogeneous ecosystem of Government and Industry
data and models, technologies, functional groups, and workflows where data and its context are linked to support effective, data-driven decision making.

Logical Data Architecture: Enterprise Supported, Federated Data Mesh

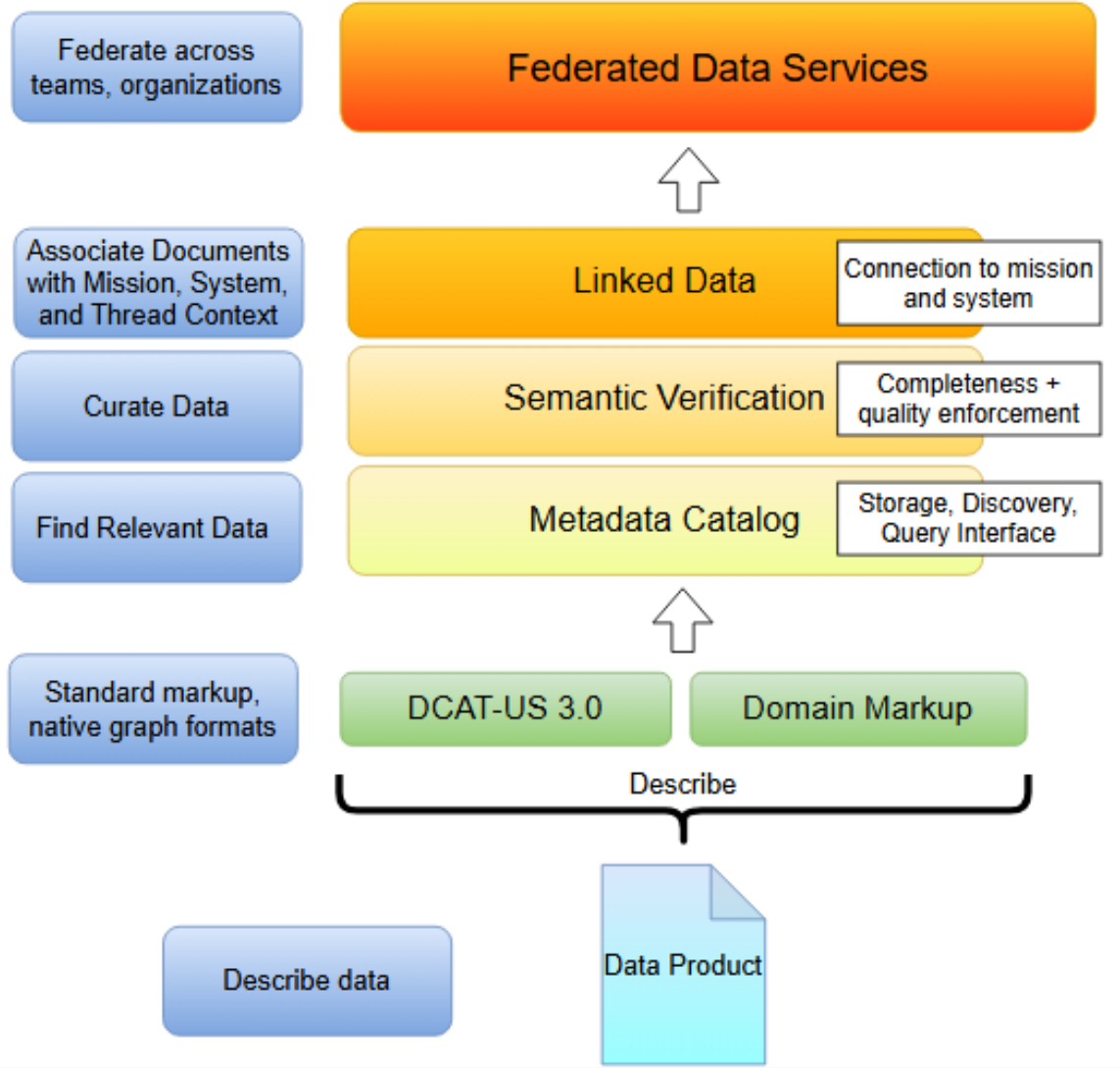
Federated Data Mesh = Architecture + Operating Model

Data domains (subject matter expert teams) own their data, responsible for the quality, accessibility, and governance of the data they produce.



Enterprise ecosystem capabilities promote common standards and can offer centralized technical foundations.

Metadata: DCAT-US 3.0



DCAT-US 3.0 is a customized implementation of the W3C Data Catalog Vocabulary (DCAT) 3.0 specification, designed specifically for US Federal Government data.

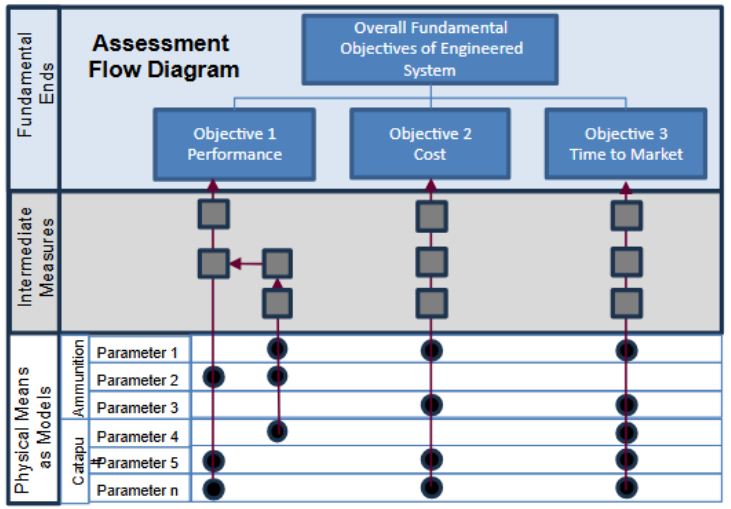
https://resources.data.gov/resources/dcat-us3/

Machine readable syntax and machine understandable semantics so that it can be understood by any system without requiring proprietary application logic.

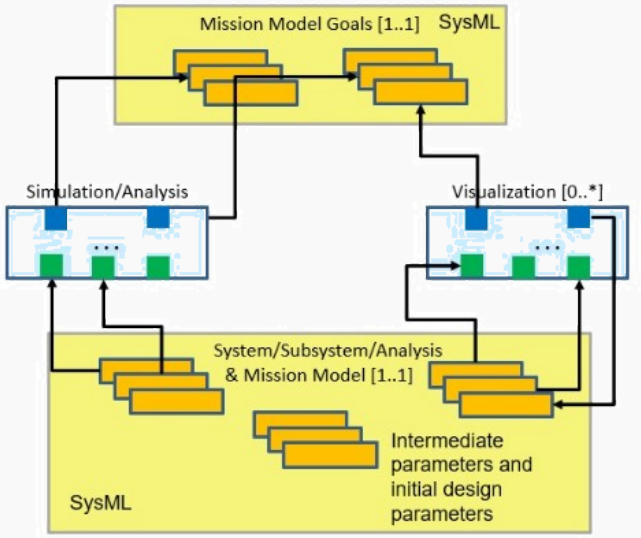
Developing standard approach for AFMC:

- Open compatibility via W3C standards
- Minimized manual crosswalks and metadata transformations between systems
- Basis for consistent query and attribute-based access control as AFMC ecosystem matures into a federated concept
- Consistent part of achieving VAULTIS

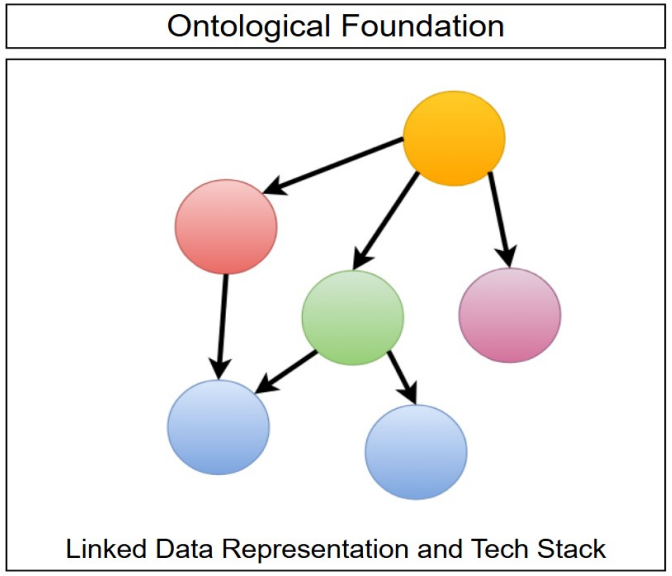
Digital Threads and Maturation into Autonomic / AI-Ready Processes



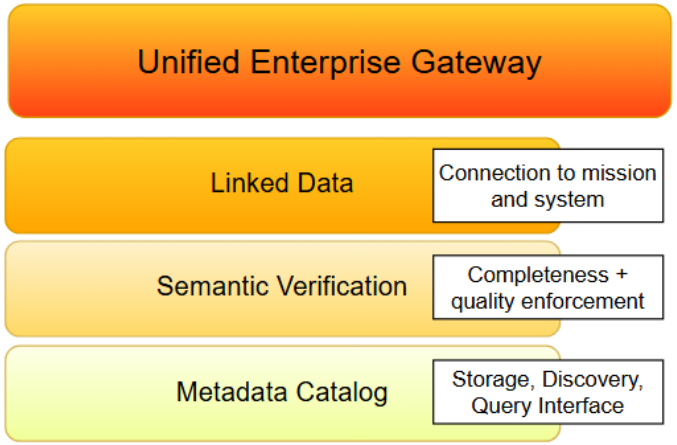
Digital Thread Definition



Syntactical Formalization



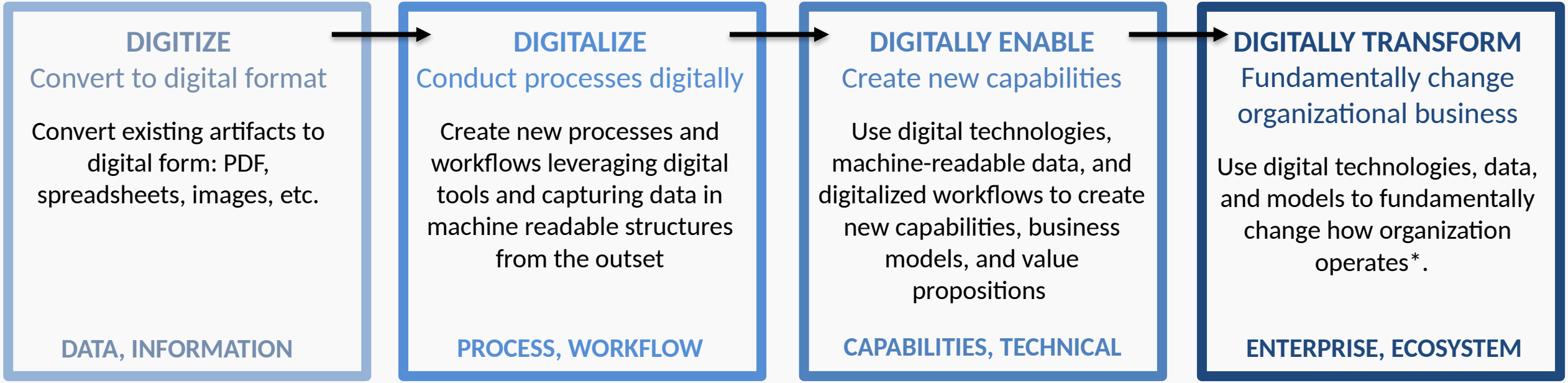
Knowledge Graph Represenation



Metadata Integration and Federation

Executable Digital Threads

Data-Centric DMM is a Sociotechnical Challenge



– Sociotechnical Challenge –

Digital enablement is the culmination of the digital-digitalize journey, effecting the data relevance from form/format to usefulness.