AEROSPACE

DIGITAL TRANSFORMATION

Building the Foundation for Innovation

Aerospace's Digital Innovation Division (DID) is leading the company's transformation into a digital enterprise while also helping Aerospace customers achieve their own digital transformation goals. This small, tightly-knit, agile organization is composed of experts in digital engineering (DE), artificial intelligence (AI), digital ecosystems, cloud technologies, modeling and simulation (M&S), and data operations. Leveraging this collective expertise, DID fulfills its core mission: build the foundation for digital innovation across both Aerospace and the broader space enterprise.

"Digital innovation" is more than a buzzword. It signifies a new operating paradigm—one that anchors all technical workflows to a unified digital backbone that can streamline analysis, automate mundane tasks, dismantle barriers to collaboration, and enhance overall operational efficiency. Key outcomes of this new paradigm include:

- More rapid, agile, data-driven decision-making at every level
- Ability to develop integrated capabilities more quickly and responsively
- Greatly enhanced ability to manage complexity across the lifecycle
- Stronger, enduring connections across all space enterprise stakeholders

The DID tenets shown below are intended to help The Aerospace Corporation and its customers navigate the transition to this new paradigm. By fostering innovation, driving that innovation, and acting strategically to effectively implement that innovation, DID is central to the foundational transformation to a future digital space enterprise.

DID Tenets

Foster Innovation: Help users and customers explore and adopt specific digital innovation technologies, tools, and processes.

Drive Innovation: Identify relevent digital technology opportunities and shepherd their transition into the space domain to enhance real-world mission applications.

Act Strategically: Advise, consult, and develop digital innovation strategies, policies, architectures, and resource plans that enable long-term, enduring success.

Leadership Team

General Manager: Matthew Ferringer

Chief Architect: Erin Ryan

Data and Software Operations: Christopher Lawson

Mission IT: Mike Auyeung

Capability Transformation: Richard Deakins

Artificial Intelligence/Machine Learning: Shawn Sloan

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The Pillars of Digital Transformation

Mission IT (Scalable Enterprise IT Services)

- Provide governance for selecting and administering value-differentiating information technology (IT) resources in support of the space enterprise mission.
- Drive the development of new Mission IT (e.g., internal corporate cloud, GovClouds) across all security levels.
- Manage enterprise-wide requirements for Mission IT hardware and software needs.

Data and Software Operations

- Provide guidance on architecting a centralized platform to manage enterprise data and software.
- Establish data and software governance to develop and to promote the usage of authoritative source of truth data sets and software applications across Aerospace.
- Spearhead the development and integration of enterprise data and software operations capabilities.

Capability Transformation (Engineering Application Lifecycle Management)

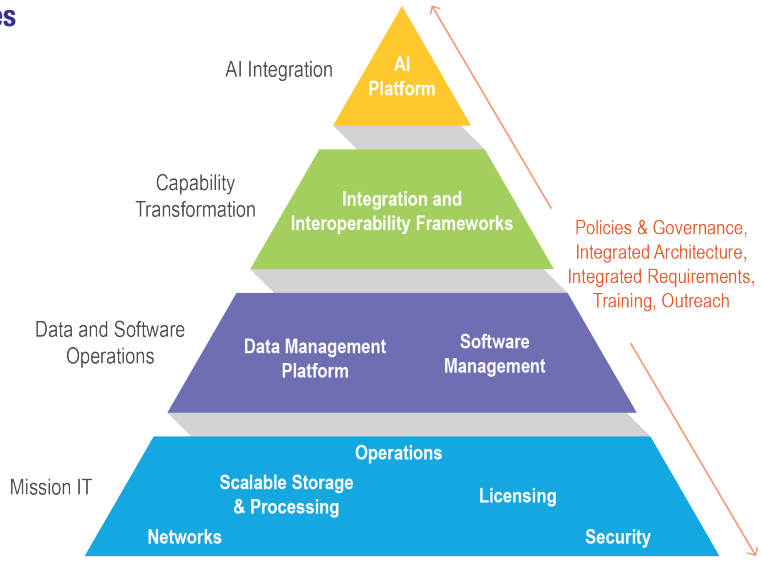
- Provide portfolio management and governance of corporate DE capabilities to enable enterprise mission success.
- Drive the efficient development, integration, production, operation, and sustainment of DE and M&S product offerings.
- Guide the reimagining of analytic workflows, processes, and methods at scale exploiting new technologies.

Artificial Intelligence Integration

- Provide embedded AI capabilities throughout all phases of space acquisitions and operations.
- Aid decision-making with advanced AI capabilities to enhance situational awareness and operational effectiveness for space missions.
- Implement a comprehensive trusted AI framework for space applications to assure the reliability, effectiveness, and safety of AI technologies through rigorous validation and compliance with governance and best practices.

Interdependent Foundational Capabilities

To provide effective, sustainable digital capabilities that meaningfully improve the end-user experience, each of these pillars provides core capabilities that both enable and interact with other core capabilities. The pyramid shown here lists these core capabilities from the most foundational (M-IT at bottom) to the most user-facing (AI at the top). Various digital workflows span this pyramid by harnessing these core capabilities as part of an integrated “tech stack” that fundamentally transform the way the enterprise works.



The Aerospace Corporation

The Aerospace Corporation is a leading architect for the nation’s space programs, advancing capabilities that outpace threats to the country’s national security while nurturing innovative technologies to further a new era of space commercialization and exploration. Aerospace’s national workforce of more than 4,600 employees provides objective technical expertise and thought leadership to solve the hardest problems in space and assure mission success for space systems and space vehicles. For more information, visit www.aerospace.org.

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