AFRL

AFRL/RXM OVERVIEW
DAF MANTECH & DPA TITLE III EAPO

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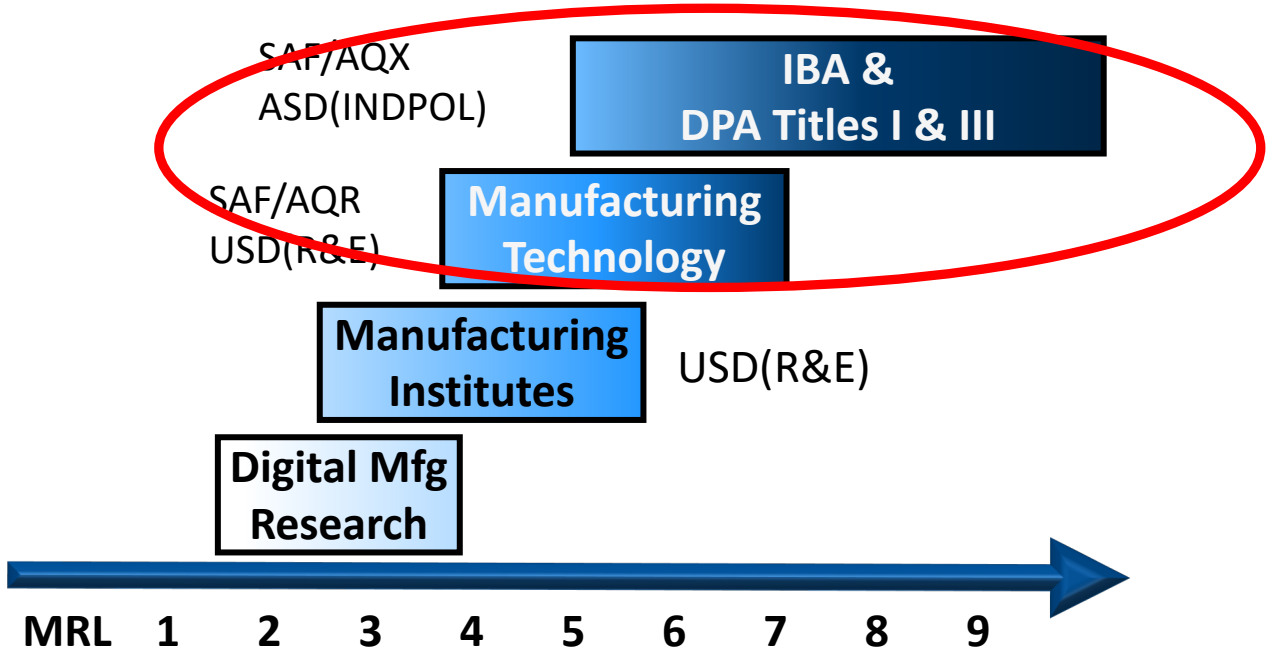
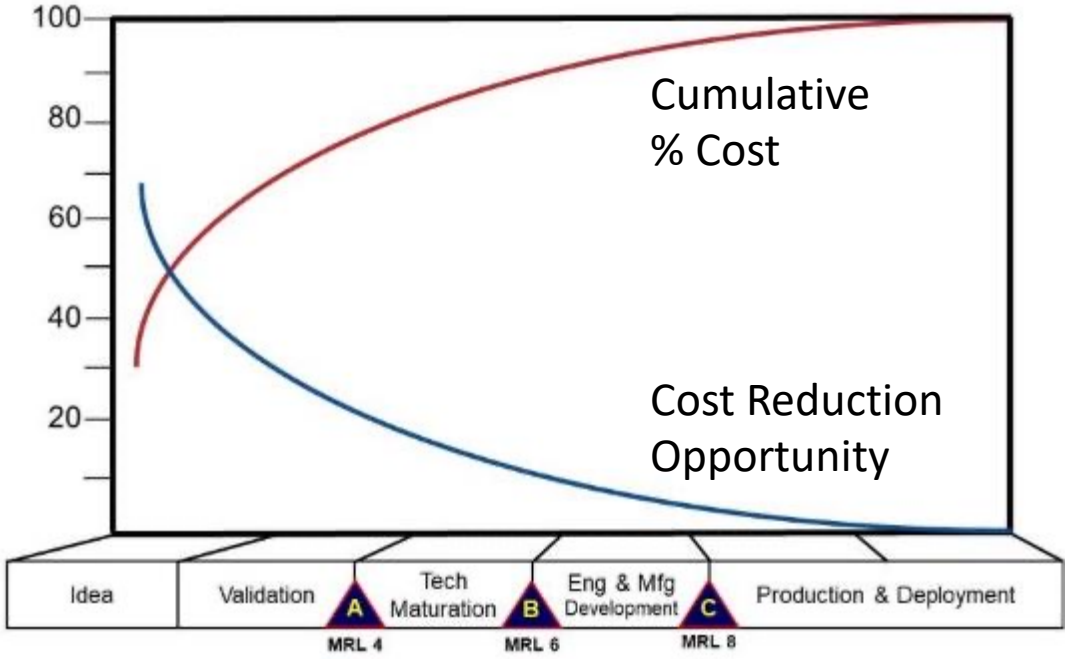
AFRL/RXM – Curating the Defense Industrial Base

- Significant opportunity to realize cost savings by engaging with stakeholders early to promote manufacturable designs and ensure the industrial base will be ready to produce
- Responsive to acquisition programs across the development, production and sustainment lifecycle





AFRL/RXM uniquely addresses manufacturing & industrial base challenges

- ***across manufacturing development lifecycle***
- ***from process conception through full rate production***
- ***across the spectrum of aerospace technology***
- ***for both acquisition and sustainment***

Defense Production Act (40 U.S.C. 4501 et seq.)

- The Defense Production Act (DPA) authorizes the **President** to **ensure the availability of U.S. and Canadian industry for U.S. defense, essential civilian, and homeland security requirements**.
- The **House Committee on Financial Services** and the **Senate Committee on Banking, Housing, and Urban Affairs** have jurisdiction over DPA.

DPA Authorities		
Title I	Title III	Title VII
Priorities and Allocations	Expansion of Productive Capacity and Supply	General Provisions
• Prioritize Federal contracts over all other orders • Control distribution of scarce materials within the civilian economy • Allocate scarce materials against Federal or private contracts • Prevent hoarding of scarce materials	• Incentives to develop, maintain, modernize, and expand production capacity or critical technologies: – Loans/ loan guarantees – Purchases/ purchase commitments – Grants and subsidies	• Mandatory survey authority of any U.S.-registered business entity • Anti-trust immunity for industry, to develop and implement national emergency preparedness plans • Committee on Foreign Investment in the U.S. (CFIUS) • Civilian Executive Reserve, called into Federal service during a national emergency

DPA Title III Management Structure

Air Force
DPA Title III Executive Agent,
per direction of OASD IBP, executes
identified projects

Title III Program Executive Agent
SECAF HON Mr Frank Kendall
USECAF HON Ms Gina Ortiz Jones

Title III Program Executive Agent (delegated)
SAF/AQ HON Mr Andrew Hunter
Ms Darlene Costello (dep)

Title III Program Executive Agent (delegated)
SAF/AQX Mr Mark Murphy
SAF/AQC (Pk support) Mr Scott Calisti

AFRL/RX
Title III Executive Agent Program Office
AFRL/RXM Ms Diana Carlin
Mr Mike Sanchez (dep)

Guiding Documents
DODD 4400.01E
DODD 5101.1
HAF Mission Directive 1-10
AFI 63-101

OSD
Provides top-level policy guidance and oversight of the Title III program

Under Secretary of Defense Acquisition and Sustainment
HON Dr. William LaPlante
HON Dr Radha Plumb (dep)

Assistant Secretary of Defense (Industrial Base Policy)
HON Dr Laura Taylor-Kale
Mr Michael Vaccaro (Principal Dep)

Deputy Assistant Secretary of Defense (Industrial Base Resilience)
Ms. Halimah Najieb-Locke

Manufacturing Capability Expansion and Investment Prioritization Program Director
Mr. Anthony Di Stasio
Ms Aissa Tovar (Dep TIII PD)

Guiding Documents
Executive Order 13603
DODD 4400.01E
ODASD(INDPOL) – SAF/AQX – AFRL/CC MOA
Memoranda for the Record to AFRL/RX

Roles and Responsibilities as codified in MOA

- Determine project eligibility
- Select projects to receive Title III support
- Coordinates and obtain Presidential Determination prior to project award

- Title III Executive Agent (EA)
- Establish and support a Title III Program Office to execute the program
- Provide Program Office oversight

- Serve as EA Title III Program Office
- Maintain a Program Office at WPAFB
- Executes all phases of business and technical efforts, project development, contracting, financial management, project execution, reporting & oversight
- Ensure compliance with DPA Title III law and FAR/DoDGARs

- **Executive Order 14017** required a **whole-of-government effort** to assess risk, identify impacts, and propose recommendations in support of a healthy manufacturing and defense industrial base – a critical aspect of economic and national security.
- Leverage assets:
  - —Bipartisan support
  - —Interagency knowledge
  - —Established program
- Mitigate Pricing Threats

Manufacturing Technology Program

10 USC 4841 Manufacturing Technology Program

"Establishment.-The Secretary of Defense shall establish a Manufacturing Technology Program to further the national security objectives of section 4811(a) of this title through the development and application of advanced manufacturing technologies and processes that will reduce the acquisition and supportability costs of defense weapon systems and reduce manufacturing and repair cycle times across the life cycles of such systems."

2,000 hours saved per A/C For F-22

Measure of Success: *Ensure advanced manufacturing processes, techniques, and equipment are available for reducing DoD materiel acquisition, maintenance, and repair costs.*

$3.2B Cost Avoidance for F-35

Measure of Success: *Aid in the economical and timely acquisition and sustainment of weapon systems and components.*

US Domestic Supply Assured For Ga_2O_3

Measure of Success: *Advance the maturity of manufacturing processes to bridge the gap from research and development advances to full-scale production.*

FY2024 DAF ManTech Investment Strategy

ADVANCED CONCEPTS

Procurement & Sustainment: incl. DEW

SPACE SYSTEMS

Env. Systems, Maneuverability, Payloads, ISAM

HYPERSONIC STRIKE SYSTEMS

High Temp Windows, Boost Glide & Air-Breathing Systems

AUTONOMOUS COLLAB SYSTEMS

Structures, Sensors, Propulsion, & Systems Assembly

NETWORKED C3 SYSTEMS

Wideband Phased Arrays, WBG Semiconductors, ME Commons, & Quantum Devices

ADVANCED MANUFACTURING TECHNOLOGIES

DIGITAL ENTERPRISE

AUTOMATION, ROBOTICS, & MIXED REALITY

ADDITIVE MANUFACTURING

DIGITAL MANUFACTURING RESEARCH

Advanced Concepts

Current Systems

F15

MQ9

F22

AgilePod®

F16

AIM9X

F35

Next Generation Systems

Strike Systems

Advanced Aircraft

TRANSFORMATIONAL CAPABILITIES OFFICE

AIR FORCE SCIENCE & TECHNOLOGY STRATEGY

Future Systems

SKYBORG

GOLDEN HORDE

USSF

Battery Technologies

Manned Unmanned Weapon Terrestrial Solider

Charging

Conformal

Solid State

Thermal

Manufacturing Objectives

- Affordability – 10:1 ROI
- Dev. Time & Production Rate – 50% faster
- Manufacturing Risk Reduction
- Validated Pull from a Program of Record
- Pervasive / Future Spiral Transitions

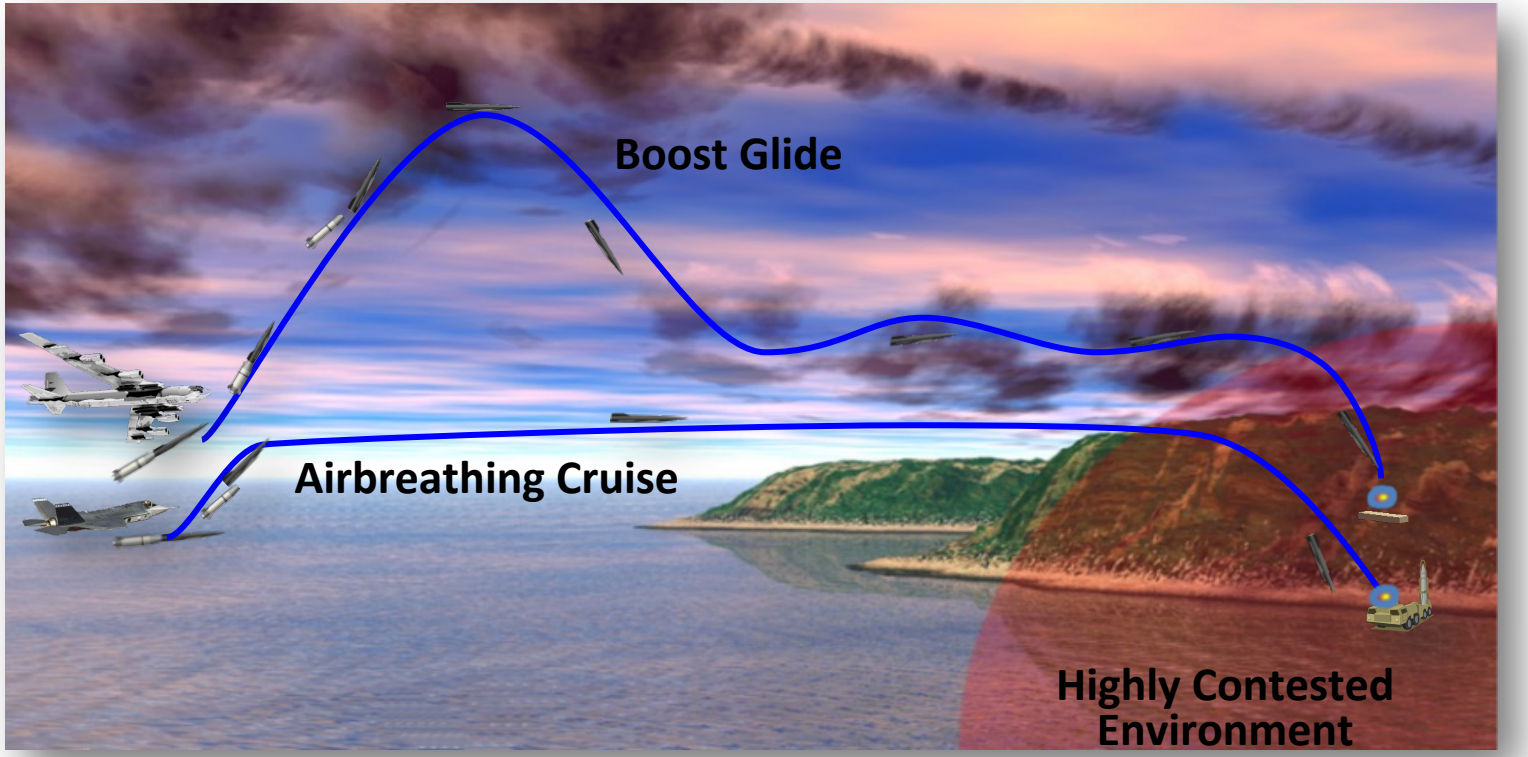
Manufacturing for Space Systems

Reduce cost and improve acquisition timelines through manufacturing innovations of advanced technologies for DoD space applications in LEO and beyond.

10-100x more satellites with 10x increase in deployment rate

- **Proliferated Architectures**
  - Operational Resiliency
  - More Dynamic Operational Capability
  - Rapid Design & Mfg of Optimized Structures
  - Lightweight, Scalable Propulsion
- **Commoditization of Advanced Sensors**
  - Modular Phased Arrays
  - Active Passive Modules
- **Low C-SWAP Environmental Protection**
  - Lightweight Radiation Shielding
  - Efficient Thermal Management
- **In-Space Servicing, Assembly & Mfg**
  - Enabling Unlaunchable Subsystems
  - Eliminate Launch Mortality
  - Extend Operational Lifetime

Hypersonic Strike Systems



- **Weapon System Availability**
  - Alternative Materials & Mfg Processes
  - Expand Capable Suppliers
- **Affordable Mass**
  - Cost-Effect Benefit
  - Sufficient Quantities for Effectiveness
- **Extended Stand-off Range**
  - Efficient Thermal Protection Systems
  - CMC & Refractory Propulsion Producibility
- **Maneuverability & Survivability**
  - Advanced Leading Edges
  - High Temperature Sensors & Windows

"Affordable Capability at Capacity": 10-100x increase in production rates with 10x reduction in cost

Autonomous Collaborative Systems

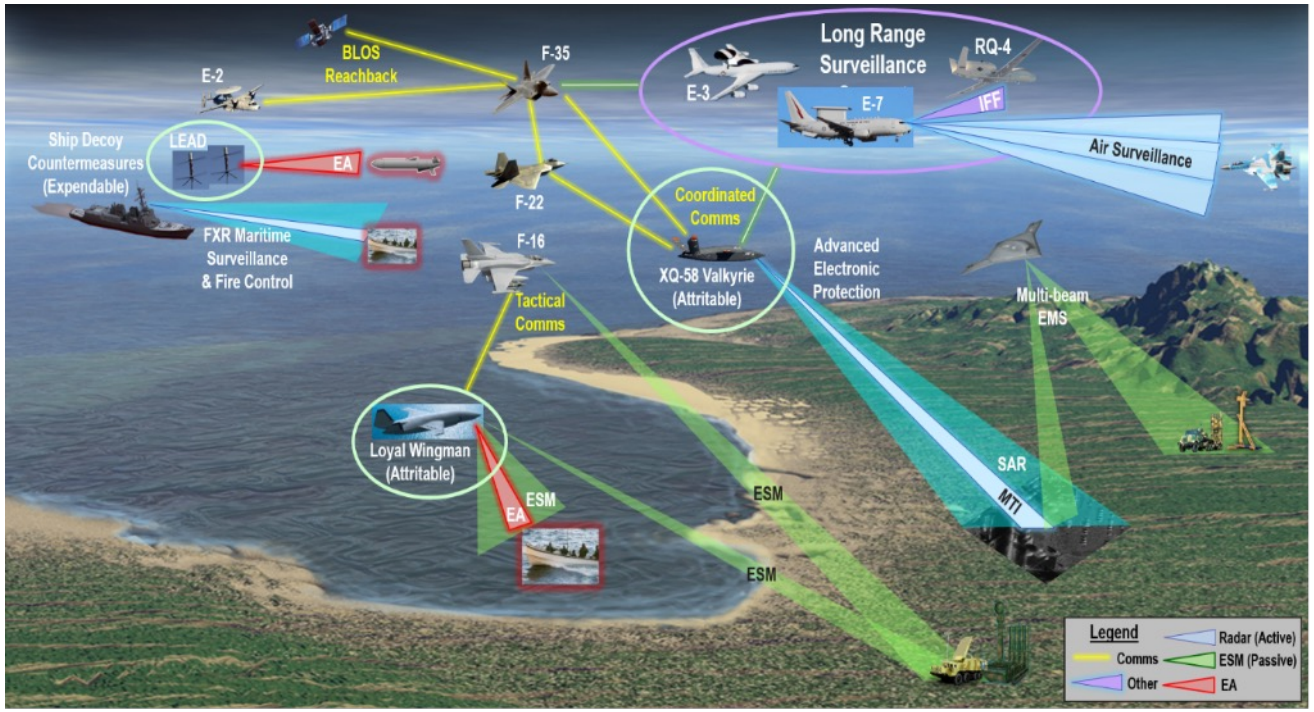
Manufacture networked, highly autonomous low cost, simplified systems acting in concert to augment and/or fulfill manned system specified objectives

Advanced Electronic Materials and Manufacturing Approaches Enable Sensor Capabilities: Standoff Range, Data Throughput, SWAP, Higher Temperature, Low Power

- **Affordable Mass**
  - Low-Cost Systems
  - High-Rate Manufacturing Approaches
  - Distributed Suppliers
- **High Performance**
  - Lightweight Structures
  - Scaled, High Thrust Turbine Engines
  - Low C-SWAP Sensors
- **Agile Systems**
  - Genus-Species Derivatives
  - Sub-system Modularity & Interoperability
  - Digitally-based Government Reference Architecture

Networked C3 Systems

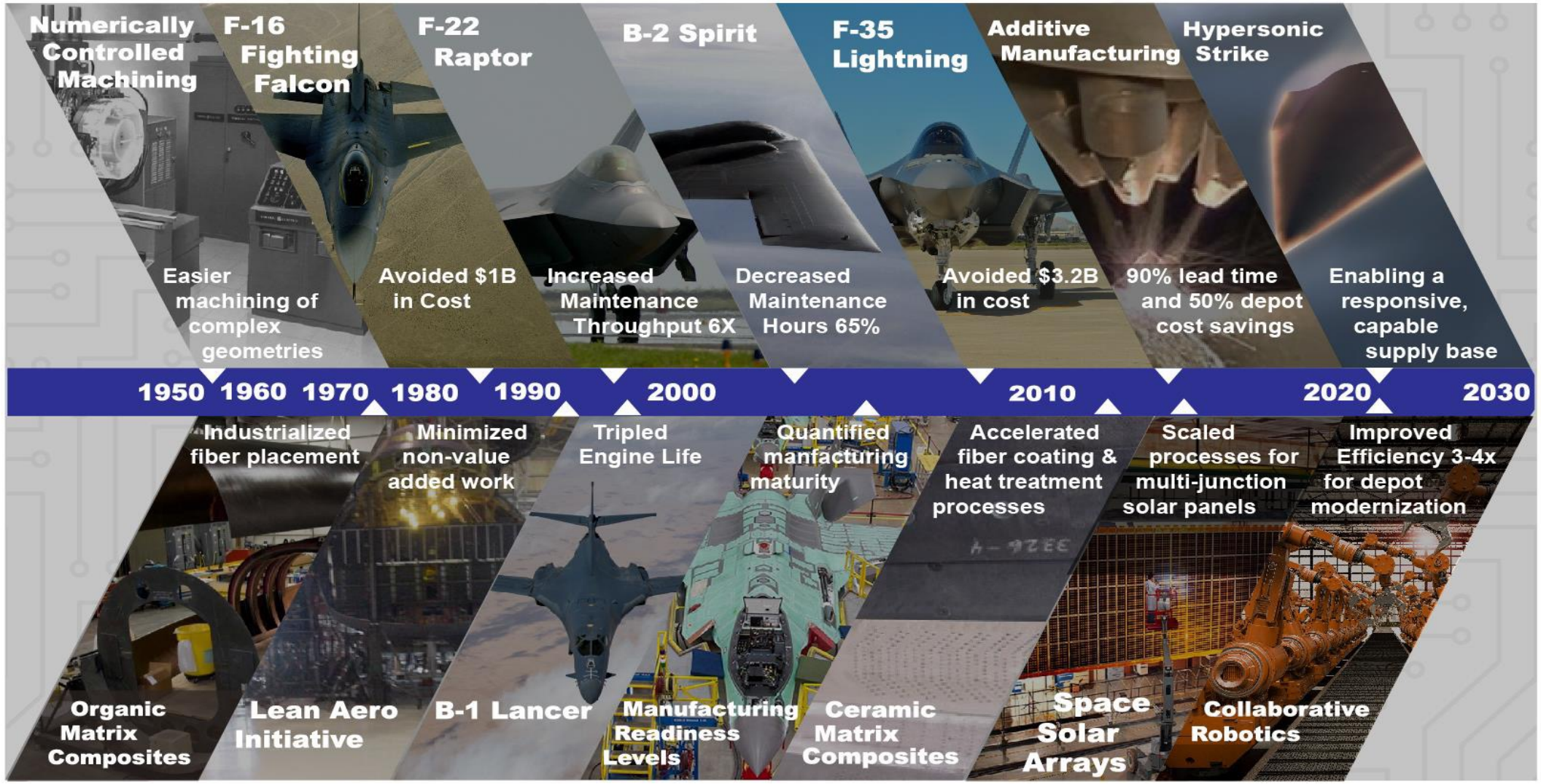
Enable Secure, Robust, Networked C3 Microelectronics in Contested Environments and Real-time, Sensor Information Shared Across the Battlespace



Advanced Electronic Materials and Manufacturing Approaches Enable Sensor Capabilities: Standoff Range, Data Throughput, SWAP, Higher Temperature, Low Power Consumption,

- **Wider Bandwidth Electronics**
  - Increase Data Throughput
  - Enhance Anti-Jam Capability
- **Agile, Reconfigurable Electronics**
  - Multi-Functional Modules
  - Digital Front Ends
  - Heterogeneous Integration
- **Higher Power & High Temp Electronics**
  - C-SWaP, Efficiency
  - High Frequency Switches
  - Extreme Environments
- **GPS-denied Position, Nav & Timing**
  - Global comms in contested environs.

Delivering Aerospace Manufacturing Technologies for > 70 Years



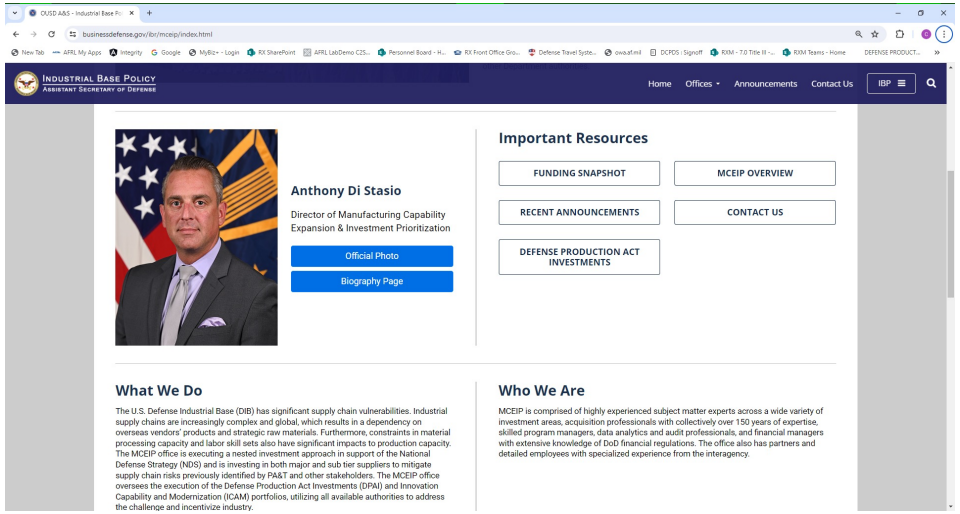
Learn More & Opportunities

- Defense Production Act Title III
  - General Information

  https://www.businessdefense.gov/ibr/mceip/index.html
  - Funding Opportunities

  https://sam.gov/opp/f373370cfe504a0c9ac0ad41dccee52e/view

  https://www.dibconsortium.org/solicitations/



- Manufacturing Technology
  - Open Broad Agency Announcement

  https://sam.gov/opp/322f079c764d42e8a94526012106d7b3/view

AFMANTECH
UNITED STATES AIR FORCE