Air Force MINSAV Industry Day

Office of the Deputy Assistant Secretary of the Air Force Science Technology and Engineering (SAF/AQR)

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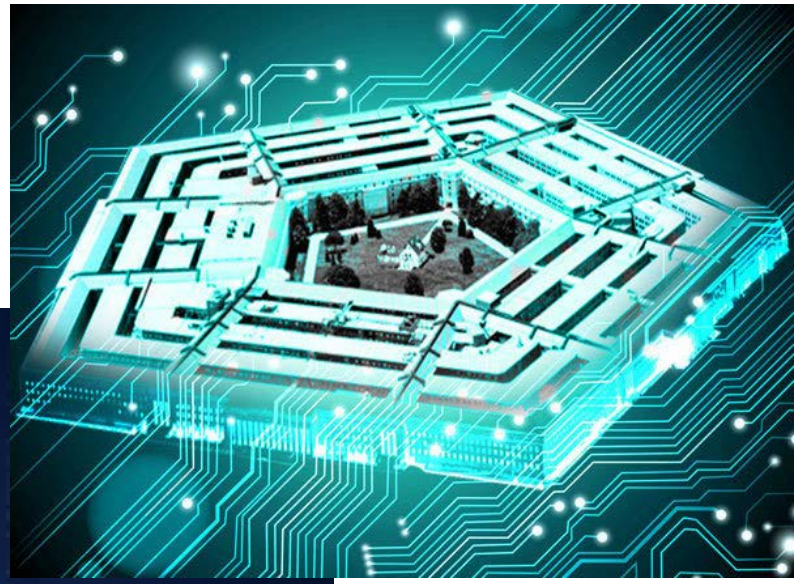
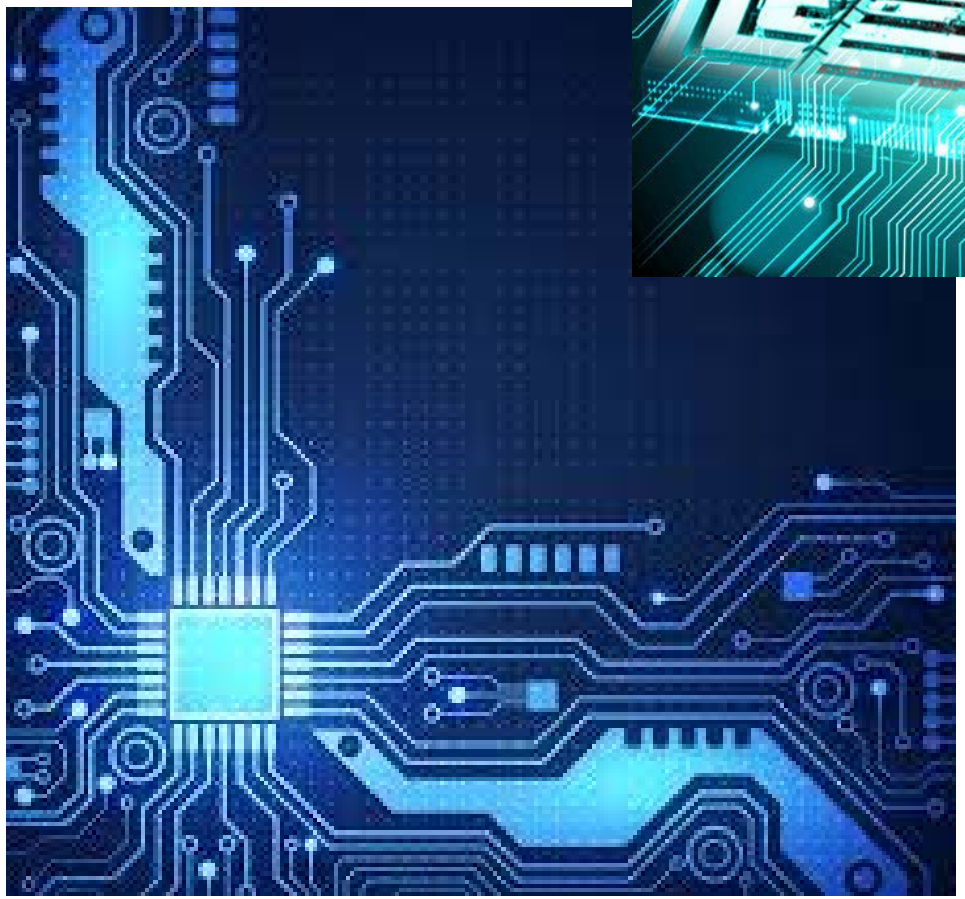
Introduction

- Air Force Acquisition Enterprise
- AF Battlefield of the Future
- Research Alignment
- Best Sources
- Relevant Applications





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Air Force Acquisition Enterprise

- **Secretary of the Air Force for Acquisition (SAF/AQ)**
  - **Mission - Cost effectively modernize to deliver capability to the warfighter when needed.**
  - **Vision - Deliver enduring world class capabilities to assure air, space and cyberspace dominance for the nation and our allies.**
  - The Office of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics oversees Air Force research, development, acquisition and program sustainment activities totaling an annual budget in excess of $60 billion for more than 550 acquisition programs.
- Secretary of the Air Force for Acquisition in Research (SAF/AQR)
  - To ensure technological advantage, invest in game changing technologies that can amplify enduring attributes of airpower – speed, range, flexibility and precision.
  - Align AF research investments to maintain national security advantage in the air, space, and cyber domains.

Challenges and threats to our national security are evolving rapidly – in some cases our near-peer competitors are matching or exceeding our nation in game changing capabilities.

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Air Force S&T Tenants

- Prepare for an Uncertain Future and Investigate Game-Changers to Shape the Art of the Possible into Military Capabilities
- Create Technology Options that Address Urgent Warfighter Needs and Provide New AF Service Core Function Capabilities in Support of the Joint Mission
- Maintain In-House Expertise to Support the Acquisition and Operational Communities and Modernize and Improve Sustainability of Unique Research Facilities and Infrastructure
- Develop Future Air Force Leaders with an Appreciation for the Value of Technology as a Force-Multiplier
- Remain Vigilant Over and Leverage Global S&T Developments and Emerging Capabilities

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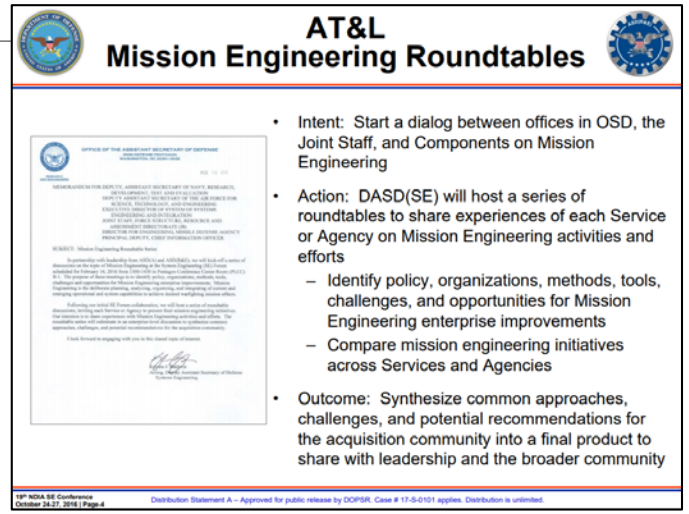
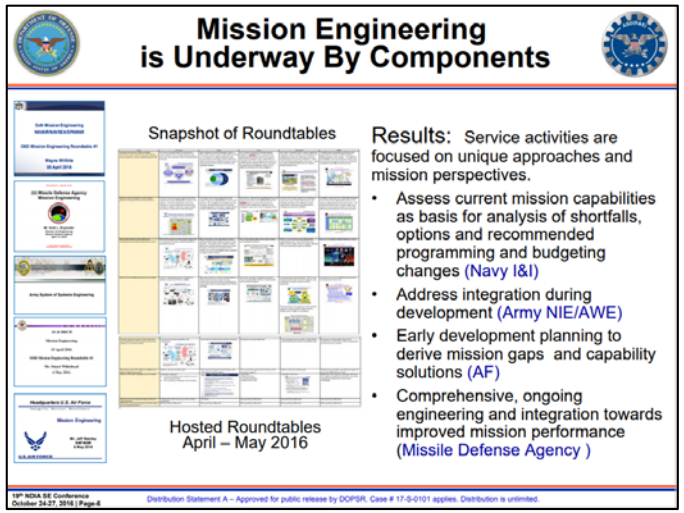
Air Force Microelectronics Perspective

- Develop innovative research internally and leverage efforts across the innovation enterprise to seamlessly integrate new technology into our systems.
  - USD(R&E), Service Partners, DARPA, or industry

- Microelectronics are a key enabling technology, pervasive and necessary
  - Leverage commercial off the shelf components and government proprietary solutions to deliver superior technologies to the warfighter
  - Cooperatively work within the DoD Research Enterprise to align common microelectronics objectives
  - Microelectronics opportunities
    - Need to modernize existing microelectronic systems
    - Specialization and tailoring as a differentiating capability





As indicated in the National Defense Strategy, “Success no longer goes to the country that develops a new technology first, but rather to the one that better integrates it and adapts its way of fighting.”

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Future Air Force Battlespace

- Combination of Manned, Unmanned, and Autonomous platforms working cooperatively to achieve mission objectives
- Quick decision on-board processing necessary at the edge for optimal decision making
- High bandwidth data exchanges for cloud and remote processing
- Resilient systems capable of operating under duress in contested environments

Technology to make and keep the fight unfair!

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Air Force Research Enterprise Alignment

OSD Guidance

Third U.S. Offset Strategy

National Defense Strategy / Defense Planning Guidance

ASD(R&E) COIs: Sensors, EW, Adv Electronics, Cyber, C4I

- DoD Microelectronics Roadmap
- National Semiconductor Leadership Strategy
- Trust and Assured Microelectronics
- Microelectronics Innovation for National Security and Economic Competitiveness

Air Force Guidance

Core Function Support Plans

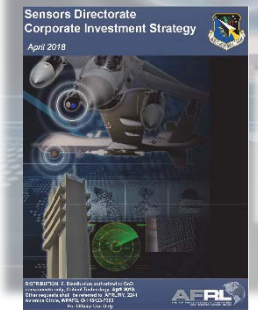
GIISR, AS, CS, GPA, etc…

AFSAB Quality Review & Studies

Air Force Research Laboratory Guidance

- Sensors Directorate
- Space Vehicles Directorate
- Information Directorate
- Munitions Directorate
- Air Vehicles Directorate
- Air Force Office of Scientific Research
- Human Effectiveness Directorate
- Materials Directorate
- Directed Energy Directorate
- Propulsion Directorate

Sensors Directorate Guidance



Annual RY Corporate Investment Strategy

Biannual C4ISR Technology Program Plan

RY Enduring Challenge Framework

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"What I want to bet on is the ability of the United States and our Western allies to out-innovate adversaries."
– Dr. Griffin Undersecretary of Defense for Research and Engineering

Best Sources for Innovation via Experimentation

- Unrivaled U.S. expertise for Research and Development
- Utilize commercial best practices
- Assured Access for Fabrication and Design
  - Confidentiality
  - Integrity
  - Protection
- Independent Inspection
  - Process
  - Design
  - Data Artifacts

10 USC 2373 – Procurement for Experimentation Purposes

The SECDEF and Secretaries (SAF/AQ) may each buy

ordnance, **signal**, chemical activity, transportation, energy, medical, space-flight, and aeronautical supplies, including parts and accessories, and **designs**

necessary for experimental or test purposes in the **development of the best supplies** that are needed for the **national defense**.

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Relevant Air Force Applications

- SoA Data Processing
- Domain Specific Architectures and Accelerators
- Artificial Intelligence
- Machine Learning
- Communications (5G)
- Electronic Warfare
- Spatial/Spectral Agility
- Position Navigation and Timing (PNT)

The rapid pace of change will not relent and the Air Force must ensure it continues to provide the necessary capabilities to dominate the current fight, prepare for the future fight, and always ensure Airmen have the technological advantage over our adversaries.

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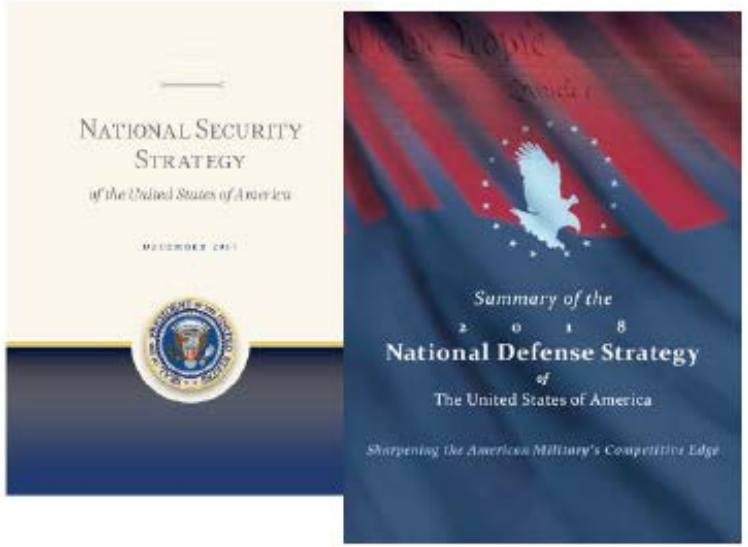
Conclusion

- Innovation with Commercial, Defense Industrial Base, Small Business, FFRDC and University partners is Key
- Continued alignment of S&T investments to National Security Strategy and Air Force Strategy
- Increased use of experimentation and prototyping as a mechanism of generating relevant demonstrations
- Access to the best technologies to ensure the Air Force is revolutionary, relevant and responsive



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Questions?

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