Addressing Air Force Capability Requirements with Emerging Technology Options

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United States Air Force Mission

The Mission of the United States Air Force is to Fly, Fight, and Win...

In Air, Space, and Cyberspace
What We Do – Core Missions

- Air and space superiority, cyber assurance
  - Air superiority foundational to joint operations & American way of war
  - Domains likely to be most contested in future
- Intelligence, surveillance, reconnaissance (ISR)
  - Maximizing battlespace awareness
  - ~60 RPA patrols, ~1,200 hrs full-motion video per day
- Rapid global mobility
  - 1M+ airlift & tanker sorties in support of Mideast ops
  - One airlift sortie every two minutes, 24/7/365
  - 97% aeromedical evacuation survival rate
- Global strike
  - Hold any target on planet at risk
  - Two-thirds of America’s nuclear triad
- Command & control
  - Integrates them all

Global Vigilance, Global Reach, Global Power for the Joint Team
Air Force Core Functions
What We Bring to the Fight

- Nuclear Deterrence Operations
- Air Superiority
- Space Superiority
- Cyberspace Superiority
- Command and Control
- Global Integrated ISR
- Global Precision Attack
- Special Operations
- Rapid Global Mobility
- Personnel Recovery Operations
- Agile Combat Support
- Building Partnerships
- Education and Training

Each Core Function led by AF 4-Star
AFMC Mission Goals

Continue to Strengthen AFMC’s Role in the Nuclear Enterprise

Advance Today’s & Tomorrow’s Combat Capabilities through Leading-Edge Technology

Acquire and Support War-Winning Capabilities

Perform World-Class Test and Evaluation

Sustain Air Force Capabilities through World-Class Depot Maintenance & Supply

Nuclear

Technology

Life Cycle Management

Test & Evaluation

Sustainment
AFRL Mission

Leading the discovery, development, and integration of affordable warfighting technologies for our air, space, and cyberspace force.
Warfighter Focused Innovation
Appropriated S&T Funds

Congressional Interest

DoD S&T Policy and Priorities

Collaboration with Government and Coalition Labs
Long Term S&T Technology Possibilities

CFLI and CFMP Demand Signals

Product and Sustainment Center Demand Signals

PROGRAM OF RECORD EVOLUTION

AF S&T Strategy
AF Core Function Master Plans
AF/ST Tech Horizons

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Air Force S&T Planning Process
Identifying Highest Priority Capability Needs

S&T Collaborative Needs/Solutions Process (MAJCOMs – Centers – AFRL)

Identify S&T Needs & Propose Technology Solutions

MAJCOM S&T Governance

S&T Drivers
NMS, QDR, DPG, CSAF Vision docs, AF Strategy, Operating Concepts, CFMPs, Global Horizons, Wargaming

Core Function Master Plans: AF-level planning
- COCOM needs are represented in CFMPs

Capability Collaboration Teams: MAJCOMs, Centers, AFRL

Applied Tech Councils: MAJCOM-level S&T Governance

S&T Group/Board and AFROC: AF-level S&T Governance

Align Air Force S&T with Air Force Priorities

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Align Air Force S&T with Air Force Priorities
Cutting-Edge Research Facilities

Compressor Research Facility

Fuels Research

Full Scale Antenna Evaluation

Optical Range

Human Centrifuge

Supercomputing

Advanced Wind Tunnels

Munitions Test Ranges

Clean Rooms

Rocket Test

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Contested Environments & Future Battlefields

The U.S. is facing increasing global R&D competition
- Resource limitations becoming more apparent - Partnerships becoming even more important
- Budget contested, represents the “new normal”

Cyberspace & EM Spectrum
- Information dominance is a must (battlespace awareness, assured C2, resilient & reliable communications, ability to synchronize ops)

Less Freedom of Movement in Space
- Other nations, private industry, all pushing forward in space
- Space situational awareness is key

Growing Sophistication in A2/AD Threats
- Access challenges require integrated technologies
- Longer distances require next gen rapid response capabilities
Push Innovation
- Leverage existing technologies ("tech push") to create new and better capabilities for tomorrow’s warfighter
- Collaboration across the Air Force’s S&T Enterprise

More Advanced Technology Demos
- Higher TRL levels
- "Tech Push" - Not all Demos must come from a defined demand signal or requirement

Affordability
- "Baked in" to what we do across the entire S&T Enterprise

Engagement & Partnership
- Focus our nation’s economic engine on USAF S&T problems
- A healthy Tech Base provides big future payoff
- International Partnership

Priorities
Air Force SBIR/STTR Programs

The Air Force Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs are mission-oriented programs that integrate the needs and requirements of the Air Force through research and development topics that have military and commercial potential.

www.AFsbirsttr.com

Next Air Force Opportunities:

SBIR 2014.1 solicitation
- Closed 1/22/2014, Proposals currently being evaluated

STTR 2014.A solicitation
- Proposal submission currently open; closes 4/9/2014
Air Force Independent Research and Development (IR&D) Program

The Air Force IR&D Program leads the use of the Defense Innovation Marketplace as primary communication tool to inform industry’s IR&D portfolio planners.

http://www.defenseinnovationmarketplace.mil/

Next Air Force IR&D Technical Interchanges:

Aero Enterprise: 14-18 April, WPAFB, OH
Nuclear Enterprise: 28 April – 2 May, Kirtland AFB, NM
C4ISR: 19-23 May, Hanscom AFB, MA

Broad Agency Announcements Included on the Defense Innovation Marketplace
What We Want to Hear From Industry

- What are industries “Big Bets?” How is industry making decisions for IR&D?
- How can AFRL and industry achieve better alignment (road-mapping)?
- What are the current trends in S&T that AFRL may be missing?
QUESTIONS?

Legacy of War-Winning Technology Development