The Mission of the United States Air Force is to Fly, Fight, and Win…In *Air, Space, and Cyberspace*

“The first essential of air power necessary for our national security is preeminence in Research.”

- General Henry “Hap” Arnold

“…innovation – fueled by intelligent, creative Airmen – will remain a key part of who we are and what we value as a service.” Gen Welsh, CSAF
AFRL Mission

LEADING the discovery, development, and integration of affordable warfighting technologies for our air, space, and cyberspace force.
Warfighter Focused Innovation

SECAF/CSAF
Air, Space, and Cyber Mission

AF Core Mission Elements

Air Force Master Plan

MAJCOMS
Domain Specific Missions

AFRL
Air, Space & Cyber S&T Mission

CSAF S&T Forums
Ensure Balance & Alignment
• SECAF & CSAF
• AF/ST
• 4-Star Customers
• SAF/AQ
Strategic Context

Limited budgets
− “New Normal”

The U.S. is facing increasing global R&D competition
− Partnerships becoming even more important

Cyberspace (threat)
− Sophisticated, growing, and evolving
− Exploiting daily, increasing disruption and developing destruction capabilities

Electromagnetic spectrum
− Spectrum competition between commercial and DoD
− Technology proliferation has leveled the playing field

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
Technology Focus Areas

Next Gen Aerospace Systems
- Air Vehicles
- Turbine Engines
- Hypersonics
- Autonomy

$457M

Weapons
- DE Counter Electronics
- High Speed Strike
- High Velocity Penetrating
- Flexible Weapons

$354M

Space and Nuclear Deterrence
- Space Access
- Payloads
- Space Platforms
- Advanced Experiments

$327M

Intelligence, Surveillance, & Reconnaissance (ISR)
- Human Centered ISR
- Synchronized Operations

$263M

Command & Control, Cyber, Communications (C^4)
- Processing, Exploitation, and Dissemination (PED)
- Cyber
- Space Communications

$225M

Affordability & Sustainment
- Manufacturing Technology
- Sustainment
- Energy/Fuels

$153M

Electronic Warfare / Electronic Protection (EW/EP)
- EW Plus
- Distributed EW
- Infrared countermeasures

$103M

Human Performance
- Autonomy
- Aerospace Physiology & Toxicology
- Training

$70M

Total: ~$1.95B, FY15 PB (No Devolved $)
Game Changers

Hypersonics
- Survivable, fast-flying
- Defeat deep layered A2/AD strategies

Directed Energy
- High Power Microwave alternative to kinetic weapons
- Lasers with air & ground selectable effects & reduced collateral damage

Autonomy
- Facilitates decisions at speed of computing
- Self awareness & troubleshooting intelligence to aid mission performance
Priorities

**Push Innovation**
- Integrate existing technologies
- Create disruptive capabilities
- Strategic agility

**Cost Imposing Strategy**
- Force costly adversary response
- $1 US → 10x adversary investment

**Affordability**
- “Baked in”
- Open architectures
- Adaptable & flexible
- Bending the cost curve

**More Advanced Technology Demos**
- Reduce acquisition risk
- Energize tech base
- Show warfighter impact
- Motivate S&Es

**Engagement & Partnership**
- Maintain global awareness
- Shape domestic tech base
- Leverage the best S&T
QUESTIONS?

REVOLUTIONARY · RELEVANT · RESPONSIVE

“The World’s Greatest Air Force - Powered by Airmen, Fueled by Innovation”

Air Force Vision 2013