Unmanned Aircraft Roadmap

OSD VISION FORWARD FOR

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Overview

• Current UAS Status

• Acquisition Challenges

• Vision and Roadmap
  – Interoperability
  – Airspace Integration
  – Unmanned Systems Roadmap

• Summary
DoD UAS Flight Hours
(By Department, By Fiscal Year)

As of September 30, 2011

Flight Hours

Does not include Group 1 UAS

AIR FORCE  ARMY  NAVY & USMC
Our program managers should be scrutinizing every element of program costs, assessing whether each element can be reduced relative to the year before, challenging learning curves, dissecting overheads and indirect costs, and targeting cost reduction with profit incentives - in short, executing to what the program should cost.

Under Secretary of Defense (AT&L) Memo to Acquisition Professionals, Better Buying Power, Sept 2010
Meeting the Challenges
Unmanned System Roadmap

Autonomy

Interoperability

Architecture Migration

Policy & Trust

Weaponization

Service Oriented Architecture

Automation Interop.

Standards

Training

Airspace Integration

Communications

Security & Spectrum Deconfliction

Bandwidth Efficiencies

Dynamic Ops

Sense & Avoid

COA & Policy

Optical Comms

Extreme Endurance

Scalable Transparent Control

Human System Interface

TTPs & CONOPS

Manned – Unmanned Teaming

Propulsion & Power

Near

Medium

Far

Far

Medium

Near
Vision: Seamless integration of diverse unmanned capabilities that provide flexible options for Joint Warfighters while exploiting the inherent advantages of unmanned technologies, including persistence, size, speed, maneuverability, and reduced risk to human life. DoD envisions unmanned systems seamlessly operating with manned systems while gradually reducing the degree of human control and decision making required for the unmanned portion of the force structure.

Roadmap & Catalog: [https://extranet.acq.osd.mil/uwir/](https://extranet.acq.osd.mil/uwir/) (CAC Protected)
OSD is Improving Interoperability and Affordability of UAS GCSs Through Open Business Processes

2. Sept. 2010, OUSD (AT&L), Mandates More Competition
5. Jun. 2011, Open Bus Model Released

OSD has developed a common architecture and designed an open business model to meet its objectives.
OA Acquisition Objectives

To remove the traditional barriers to Effective Competition in the UAS Control Segment and provide market access to a broad, heterogeneous industrial base of software providers in an agile acquisition and integration environment.
Chartered by Joint UAS Task Force Interoperability IPT Technical Society
SAE Operating Rules per Public Law 104-113 (NTTAA) and MB Circular A-119
Program of Work and Operating Rules in DoDAF AV-1
UCS WG includes all PoR Use Cases for development of UAS Standard
Acquisition Opportunities

Standards-based Interconnection..

(Silos of excellence)  (Open, Competitive Business Approach)
Summary

• Unmanned Warfare has had continuous scrutiny for portfolio efficiencies
  • Congress/GAO
  • USD(AT&L)
  • UAS Task Force

• Significant efforts is underway within OSD, AT&L focusing on affordability
  • “Should Cost” “Will Cost” of UAS systems
  • Open Business Model (OBM) vision for UAS GCSs
  • Open Architecture – Reuse
  • Remove Redundancy across Service Certification
  • Reuse verse Start New
Backups
Coordinated 2011-2036 Vision for Services and Industry

Interoperability
Autonomy
Airspace Integration
Communications
Training Standardization
Propulsion and Power
Manned-unmanned (MUM) Teaming

2011-2036 Edition planned for 3rd Qtr FY11
Airspace Integration

• **Methodology**: incremental approach to providing critical access to a given operations profile prior to implementing a full dynamic operations solution.

• **Immediate focus**: Near-term mission-critical access while simultaneously working toward far-term routine NAS access

**Vision**: Ensure unmanned aircraft have routine access to the appropriate airspace necessary to meet mission requirements
UCS Reference Architecture

Domain User Interfaces (GUI/HCIs)

UAS Business Processes

UCS Domain Services

Software Components

Information Management

SOA Infrastructure & Operational Systems

Architecture Governance

Integration

Quality of Service (QoS)