Department of Defense Report to Congress on Addressing Challenges for Unmanned Aircraft Systems

Under Secretary of Defense (Acquisition, Technology and Logistics)

September 2010

Department of Defense (DoD) Report to Congress on the Department's progress in addressing challenges for Unmanned Aircraft Systems (UAS).

REPORTING REQUIREMENT

At pages 426 and 427 of the Report of the Committee on Armed Services of the House of Representatives accompanying the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009, House Report 110-652, requests a report containing at least the following information:

"…[I]nformation on the issues being addressed by the Task Force, progress made in coordinating UAS issues within UAS programs, between UAS and ISR [Intelligence, Surveillance, and Reconnaissance] -related manned and unmanned capabilities, and its recommendations to address existing issues. In addition, the report shall describe the actions that the Department has taken to implement the Task Force's recommendations and milestones for completing any unresolved recommendations."

SECTION 1 – BACKGROUND

In lieu of creating an executive agent for UAS, the Deputy Secretary of Defense (DepSecDef) directed the formation of a UAS Task Force (TF).[1] The TF was directed to identify to the Deputy Advisory Working Group (DAWG) and, where appropriate, assign lead organizations for issues related to the acquisition and management of UAS including interoperability, civil airspace integration, frequency spectrum and bandwidth utilization, ground stations, and airframe payload and sensor management.
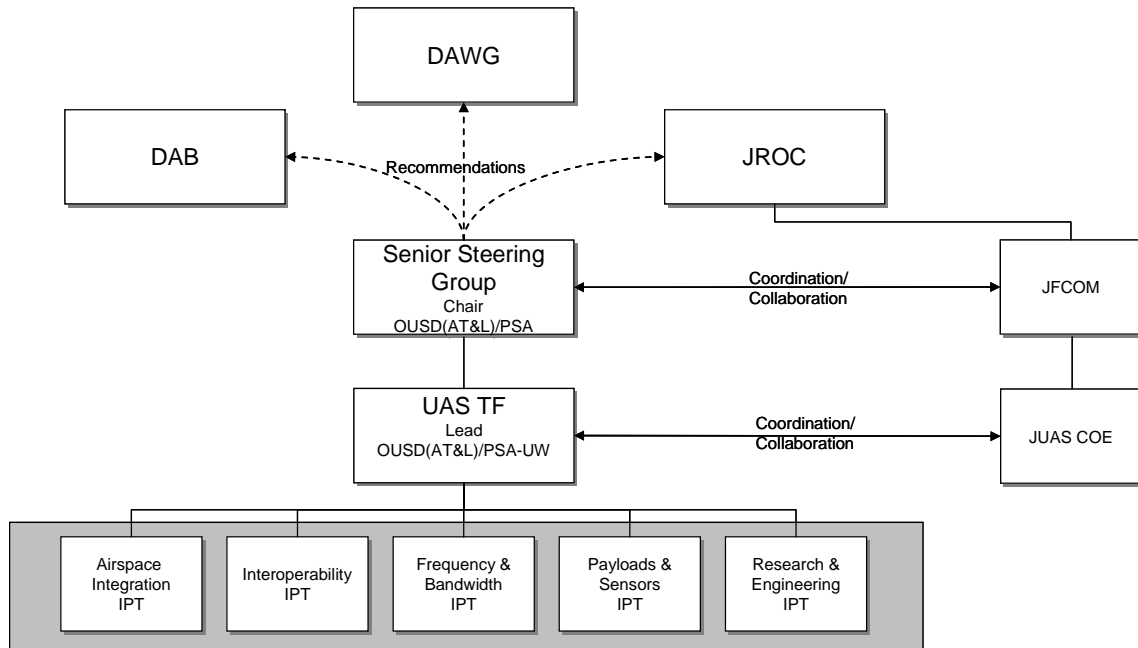

Figure 1: UAS Task Force Organization

In April 2010, the UAS TF Charter[2] was signed by both the USD(AT&L) and the Deputy Secretary of Defense. The approved organization is depicted in Figure 1. The UAS TF Charter identifies five goals for the organization which include:

1. Coordinate and evaluate DoD UAS requirements, remaining constantly conscious of technology, cost, schedule, jointness, and interoperability imperatives;
2. In coordination with key UAS stakeholders, increase the operational effectiveness of DoD UAS by promoting the development and fielding of interoperable systems and networks;
3. Shape DoD UAS acquisition programs to prioritize joint solutions which guarantee interoperability, efficient production, lower unit costs, decreased support costs, and increased capability;
4. Serve as the DoD's advocate for shaping the regulatory policies, procedures, certification standards, and technology development activities

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[1] Deputy Secretary of Defense Memorandum, "Unmanned Aircraft Systems (UAS)," September 13, 2007.
[2] Unmanned Aircraft Systems Task Force Charter, April 2010.

that are critical to the integration of Department UAS into the national airspace system to fulfill future operational and training requirements; and

5. Serve as the Department's lead activity for the development and promulgation of the Unmanned Systems Roadmap.

SECTION 2 – ISSUES BEING ADDRESSED BY THE UAS TASK FORCE

UAS Access to National Airspace System

As tasked in its charter, the UAS TF leads the Department's efforts to Integrate UAS in the National Airspace System (NAS) through shaping policy, procedures, certification standards and technology development. Working closely with the Military Departments and the DoD Policy Board on Federal Aviation, the Task Force has been able to clearly identify joint requirements, capability gaps, and issues that need to be resolved to increase access of UAS in the NAS. The Task Force has made solid progress by developing and raising DoD NAS integration issues to the UAS Executive Committee, developing a DoD Airspace Integration Plan, and guiding development of common Sense and Avoid (SAA) technology approaches.

UAS Executive Committee (ExCom)

The UAS Executive Committee is a joint committee comprised of senior executives from four member organizations: DoD, FAA, DHS, NASA. The first meeting of the UAS ExCom was held on October 30, 2009. Senior DoD leadership from the UAS TF Senior Steering Group (SSG) and the UAS TF were identified as members of the UAS ExCom and the UAS ExCom SSG and have identified key DoD airspace integration issues for the UAS ExCom to resolve.

The mission of the UAS ExCom is "to enable increased and ultimately routine access of Federal UAS engaged in public aircraft operations into the NAS to support operational, training, development and research requirements of the FAA, DoD, DHS and NASA[3]". The initial focus of the UAS ExCom is on those efforts that will provide near term access for UAS operated by federal agencies.

The UAS ExCom identified four key goals[4]:
1. Coordinate and align efforts among key Federal Government agencies (FAA, DoD, DHS, and NASA) to ultimately achieve routine safe federal public UAS operations in the National Airspace System.
2. Coordinate and prioritize technical, procedural, regulatory, and policy solutions needed to deliver incremental capabilities.
3. Develop a plan to accommodate the larger stakeholder community, at the appropriate time.
4. Resolve conflicts among Federal Government agencies (FAA, DoD, DHS, and NASA), related to the above goals.

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[3] UAS Executive Committee Charter, Sept XX, 2010.
[4] UAS Executive Committee Charter, Sept XX, 2010.

The UAS ExCom Senior Executives are supported by a SSG that consists of officials who can commit their agency to action and Working Groups (WGs) that are organized and chartered as needed to address specific tasks as directed by the SSG. As of this report, the UAS ExCom's SSG has chartered WGs to address two key issues:
1. Optimizing the FAA's review and approval process for UAS flights under a Certificate of Waiver or Authority (COA)
2. Development of a Federal UAS NAS Access Plan

The COA WG is focused upon near-term process improvements that will enable more ready access to the NAS for Federal UAS. The recommendations contained in the COA WG's report to the UAS ExCom SSG form the basis for implementation actions by the member organizations. The COA Working Group's Phase I (Operations Issues) recommendations were presented to the UAS ExCom SSG and UAS Executive Committee in January 2010 and are currently being implemented. The COA WG Phase II (Policy and Procedure issues) were identified to the UAS ExCom SSG and UAS ExCom in July 2010 and the WG is currently developing recommendations for resolving the issues.

The UAS NAS Access WG is developing a plan that addresses the milestones, policy recommendations, flight standards, and operating procedures necessary to provide a path for UAS integration into the NAS. Once those plan elements are developed, ExCom member organizations will jointly work to identify the resources required to execute the plan. The UAS NAS Access WG provided the UAS ExCom SSG a draft plan in July 2010 and it is currently being staffed so that it can be forwarded to Congress as required by Section 935(c) of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2010 in late October 2010.

DoD Airspace Integration Plan
The Airspace Integration (AI) Integrated Product Team (IPT) under the DoD UAS TF has developed the *DoD UAS Airspace Integration Plan,* which is currently being staffed, and will supersede the 2004 OSD Airspace Integration Plan. The UAS AI Plan presents incremental capability solutions that can be leveraged, improved, and utilized at multiple locations around the country. The plan provides guidance to DoD and UAS AI stakeholders for developing their Future Years Defense Plans (FYDPs). It also updates four fundamental precepts: 1) *Leverage DoD Authorities and Equities*, 2) *Apply Our World-leading Aviation Expertise to UAS*, 3) *Conform Where Possible, Create Where Needed*, and 4) *Engage as One*. Incremental capability described within this document includes Ground Based Sense and Avoid (GBSAA), Airborne Sense and Avoid (ABSAA), airworthiness certification, operational policies and procedures, and the development of technical standards.

DoD's goal is to have appropriately equipped UAS gain routine access to the NAS in order to conduct domestic operations, exercises, training, and testing. The FAA's goal is to ensure DoD UAS operations are conducted safely, present no threat to the general public, and do no harm to other users of the NAS. [5] To reach these mutually

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[5] Memorandum of Agreement Concerning the Operation of Department of Defense Unmanned Aircraft Systems in the National Airspace, dated 24 September 2007.

dependent goals, the DoD, FAA, Other Government Agencies, and aviation Standards Development Organizations are collaborating in a UAS AI enterprise to incrementally overcome the technical, regulatory, and safety challenges of UAS AI.   Additionally, the AI Plan expresses specific near, mid and long term activities to achieve improved UAS NAS access including:

DoD Airspace Integration Plan Activities	
Near-Term Activity	- Update the FAA-DoD Memorandum of Agreement to increase access to specific categories of airspace. - Improve the COA Application and approval process. - Formally ratify safety case methodology and appropriate level of safety.
Mid-Term Activity	- Certify and field GBSAA solutions. - Standardize procedures for separation, avoidance coordination and contingencies. - Develop GBSAA Fielding Plan that guides implementation at any UAS basing location.
Far-Term Activity	- Develop and approve technical standards and performance specifications. - Develop, certify and field ABSAA. - Develop, certify and field UAS-enabling technologies.

Table 1: DoD Airspace Integration Plan Activities

Common Sense and Avoid (SAA)

Recognizing the importance of developing a common autonomous SAA capability for Unmanned Aircraft (UA), DoD has chartered an AI IPT within the UAS TF to focus and coordinate DoD airspace integration efforts outlined in the AI Plan. The AI IPT assessed and prioritized activities toward developing validated airspace integration requirements and associated standards, and establishing a SAA capability that will provide NAS access through special rules/policy, new procedures, and use of ground/air based sensor technology

Additionally, funding has been initiated and budgeted for Fiscal Year 2010-2015 to: 1) develop standards and safety case analyses for ground/airborne SAA systems in support of DoD UAS airspace integration activities; and 2) development of a common, autonomous airborne sense-and-avoid system for Air Force's RQ-4B Global Hawk (GH) and Navy's Broad Area Maritime Surveillance (BAMS) UA that has the potential to provide future capability for MQ-9 Reaper and MQ-1C Extended Range Multi Purpose (ERMP).

The UAS TF asked the Army to lead the joint efforts to develop a GBSAA capability. The Army is currently evaluating a GBSAA demonstration system at El Mirage, CA, for ensuring the safe flight of MQ-1C ERMP aircraft operating in the vicinity of the airfield. This approach is also being evaluated by the Marine Corps for RQ-7 Shadow training at MCAS Cherry Point, NC, and by the Air Force for MQ-1B Predator operations from Cannon AFB, NM. Safety case methodology, test results and

lessons learned are being captured and shared to help develop a common approach for future GBSAA systems.

Flight testing of experimental airborne SAA systems is continuing and is now emerging in program developments in DoD. The Navy and Air Force are working together to leverage a common functional baseline for RQ-4B GH and BAMS aircraft. The Navy is leading development of a joint solution and building upon Air Force Research Laboratory /GH technology efforts to develop a Pilot-In-The-Loop capability which will then be leveraged to develop an autonomous ABSAA capability for GH/BAMS. ABSAA is expected to integrate with joint Ground-based Sense and Avoid (GBSAA) solutions as part of the common incremental approach and will be extended to other Group 3-5 UAS through additional investments that provide strategic benefit. Other longer term technology options to improved ABSAA include Automatic Dependent Surveillance-Broadcast (ADS-B) being implemented within the NAS. To support the Department's transition to the Next Generation Air Transportation System (NextGen) the Air Force is establishing a Joint Program Office (JPO) that will work closely with the other Military Departments to establish requirements to meet Federal implementation deadlines. The JPO, will also develop, build, and certify standards so Global Positioning System equipment will meet the new ADS-B requirement which is a key component of NextGen.

Common Control Station Architecture

The Unmanned Control Segment Working Group (UCS-WG) is a combined Department of Defense (DoD)/Industry effort to develop a common, open and scalable architecture for command and control of Unmanned Aircraft Systems Group 2 through Group 5. UAS in the categories Group 2 through Group 5 have a maximum gross take-off weight in excess of 20 lbs and may normally operate at any altitude and airspeed.

In FY 2010, the UCS-WG completed release of version 0.5 and 1.0 of the "core" architecture, with a focus on standardizing data structure and information flow. Version 0.5, released in December 2009, included a framework for the "core" architecture, based on a domain analysis of UAS missions. In addition, architecture guidance and overview documents were generated, highlighting the need for incorporation of approaches to enable information assurance and airworthiness qualification of architecture components.

Version 1.0 of the architecture was released in June 2010, and included a significantly expanded set of component "services" to define the interfaces and data flow between core components, including mission planning, vehicle control, Common Operating Picture (COP), and weather. These services will form the backbone of future Control Segments (CS), as migration plans for in-service systems are developed. Version 1.0 also included the beginnings of a Reference Architecture, which provides an example to industry and developers as to how the UCS architecture can be implemented and deployed.

In order to validate some of the initial design decisions of the architecture, UCS-WG developed and completed a plan with an initial subset of Version 1.0 software services, to be built by a representative sample of GCS manufacturers, including General Atomics, AAI, and Raytheon. These vendors will each develop their own implementations of Version 1.0 services to a prototype-level of completion, and then

demonstrate integration of their services within other vendor's GCS. This demonstration will validate the overall approach of the UCS-WG, and results from the integration effort will be fed back to the architecture group for incorporation into Version 2.0.

While the UCS-WG addresses the technical aspects of open systems GCS development, an Open Business Model was developed to present a different approach to creating software services for use among the Military Departments, third parties, and industry vendors.

Current plans for FY 2011 include continued development of the architecture, with a version 2.0 release planned for third quarter of FY 2011. This version will include expanded completion of all currently identified services, to a level that is ready for implementation by system developers, within the domains of Mission Control, Mission Planning, COP, Collaboration, and Payload Control. The Reference Architecture will be fully developed and made available to industry. Version 2.0 will also include approaches to certification, including information assurance and safety analysis. Platform specific issues will be addressed, to ensure that architecture design is not conflicting with real world capabilities and requirements. To that end, experimentation will be used on a limited basis to evaluate defined services and their performance within the architecture and software/hardware platform. Finally, in FY 2011, a plan will be finalized and approved to transition the output of the working group to Programs of Record and user communities.

Remote Video Terminals (RVT)

As the Military Departments move to standardize imagery and metadata products, based on the Unmanned Systems Interoperability Profile (USIP), the RVT systems will become less complex to design and manufacture. Decreased complexity coupled with technology advancements will drive less Size, Weight and Power (SWaP) for the soldier on the battlefield and reduced procurement costs for each of the Military Departments.

The Army's One System Remote Video Terminal (OSRVT) and Air Force's Remotely Operated Video Enhanced Receiver (ROVER) make up the RVT family. Currently there are over 1750 OSRVTs and 4928 ROVERs fielded with an additional 2800 and 65, respectively, on contract and projected to be fielded in the next year.

The UAS TF is leading a Full Motion Video (FMV) Data Link Encryption Working group to address the Headquarters Central Command Joint Urgent Operational Need addressing the exploitation of FMV data. The Military Departments began work immediately to develop and implement technical solutions required to protect the exposed signals on all manned and unmanned ISR aircraft and associated ground support equipment such as RVT and GCS. Additionally, the Department directed the Military Departments to support the longer term migration from analog signals to the full digital and National Security Agency – approved Type 1 encryption architecture. Significant progress is being made in this effort.

SECTION 3 –COORDINATION OF UAS ISSUES AND ISR-RELATED MANNED/ UNMANNED CAPABILITIES

Frequency and Bandwidth IPT

The Frequency and Bandwidth IPT continues to evaluate the emerging needs from in theater while also reassessing the need for new spectrum policy. The Department is outfitting the medium and large platforms with the Common Data Link (CDL) to improve overall interoperability as stated above and to ensure the Military Departments adhere to the spectrum programmatic guidance outlined in DoD Directive 4650.1, "Policy for Management and Use of the Electromagnetic Spectrum."[6] The DoD is also assessing its long term UAS beyond-line-of-sight needs to ensure the Department maintains a robust strategy including investment and lease options for satellite requirements.

The Frequency and Bandwidth IPT specifically provides technical analysis and regulatory guidance to help achieve more efficient and effective utilization of spectrum for UAS operations. The IPT is represented by various stake holders from within the DoD and the group focuses on improving the Department's development of tactics, techniques and procedures to improve spectrum utilization and operational tempo. This includes methods for improving spectrum access and mitigation of frequency interference during missions within the U.S. and abroad. Examples of recent accomplishments include: supported to the initial development of the Small UAS Digital Data Link and fielding of such systems to the U.S. Central Command Area of Responsibility; supported the Joint UAS Center of Excellence in defining spectrum usage options for inclusion within their UAS Concept of Operations (CONOPS) documents; spear headed discussions that led to an agreement with the National Telecommunications and Information Agency on expanded use of CDL within the U.S. and its possessions; completed analysis on satellite communications interference bounds which helped establish UAS beyond line-of-sight CONOPS; and supported the AI IPT in defining spectrum usage options for UAS operations in the NAS. The IPT is expected to take on other challenges as the mission and subsequent operations continue to change with warfighter needs.

Research and Engineering (R&E) IPT

The UAS R&E IPT supports the UAS TF by providing a link between the warfighter and acquisition communities and technology developers and by providing in-depth analysis of key issues in support of other IPTs or long term strategic technology issues. Over the last year, the UAS R&E IPT completed a technology roadmap in support of the AI IPT. The R&E IPT listed sense and avoid needs based on airspace complexity and aircraft size and mission and established a logical progression of technology to meet needs over time. The resulting roadmap integrates current efforts and will help to inform future technology investments. This activity also led to the establishment of a national goal for UAS NAS integration, which was published in the 2010 National Science and Technology Council's National Aeronautics Research and Development Plan. This national goal identifies key research areas, including

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[6] Department of Defense Directive 4650.01, "Policy and Procedures for Management and Use of the Electromagnetic Spectrum, " January 9, 2009.

airworthiness, flight control, automation, command and control, and risk of collision with other aircraft. Research must also address systems that enable both UAS self-separation and collision avoidance from cooperative and non-cooperative aircraft and with and without operator input and/or air traffic control services.

The UAS R&E IPT is currently working on developing a UAS Propulsion and Power roadmap. UAS will require increased efficiency, power density, affordability, producability, and maintainability from future propulsion and power systems. These systems are typically unique in the fact that many platforms pursue extreme endurance. The roadmap will breakout UAS propulsion into functional areas such as Turbine/Turbofan, Internal Combustion, and Hybrid/Electric Propulsion and Power based on aircraft size and mission requirements. For each of these areas, the IPT will establish appropriate metrics and identify on-going and needed technology approaches to help determine potential opportunities to coordinate technology across programs and organizations and identify gaps.

Interoperability IPT

A key goal for the IIPT is to identify the interoperability requirements across the various DoD Unmanned Systems - to include the interoperability of those systems with other types of platforms and with the Joint Force user community. The 2009 Unmanned Systems Integrated Roadmap Appendix F (Unmanned Systems Standards) describes interoperability requirements and Unmanned Systems Standards for air, ground, and maritime systems. Appendix F describes interoperability as the "ability to operate in synergy in the execution of assigned tasks" (JP-1-02). Further, DODD 5000.1 establishes the requirement to "acquire systems and families of systems that are interoperable".

In order to define and enable interoperability decisions enterprise-wide for current and future unmanned systems, the IIPT will complete a portfolio capability review and assessment. The development of an interoperability strategic plan, while considering the potential growth to interoperability with other DOD systems, is key to ensuring Military Department level equities are protected while allowing for sharing of benefits across the enterprise.

The culmination of the IIPT's efforts will allow the DoD Unmanned Systems Task Force to confirm the Joint capability needs for interoperability, identified gaps in current and programmed capability, and propose a Strategic Plan to develop the capabilities to mitigate the interoperability gaps across the Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities construct. A supporting Technology Development and Maturation Plan will focus necessary attention on the Materiel solutions required. It is anticipate these IIPT efforts will commence in 2011.

Unmanned Systems Roadmap (USR) FY2009-2034[7]

The USR, http://www.acq.osd.mil/psa/organization/uw.html, is a product of analysis of warfighting requirements, policy guidance, and projected science and

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[7] http://www.acq.osd.mil/uas/docs/UMSIntegratedRoadmap2009.pdf

technology capabilities across a 25-year period. The Roadmap is intended to guide Department investment in unmanned systems and to inform industry of Department priorities for future warfighting capability needs. The Roadmap encompasses all three environmental domains: air, ground, and maritime. It also captures those unmanned systems that are already funded through the 2009 President's Budget and offers speculation as to what types of systems feasibly could be developed and employed through 2034, well outside the Future Years Defense Plan. It identifies the types of tasks that could be accomplished using unmanned systems within the Joint Capability Areas and highlights the multi-functional nature of such systems as appropriate. The Roadmap describes an expanding performance envelope that captures the current state-of-the-art and projects an evolution in performance across the next 25 years. From these projections, the Roadmap identifies technologies that will need to be developed and matured in order to bring about the evolving performance. In essence, the Roadmap lays out a vision in terms of potential missions that could be performed by unmanned systems, the desired functionality and performance needed by the systems to perform those missions, and the technology advancements needed to achieve such performance. From this vision, the Roadmap addresses the associated strengths and opportunities that can be capitalized to achieve such a vision. It also identifies those risks and challenges that must be mitigated and addressed in order to bring about such a vision. Finally, the Roadmap articulates a series of recommended actions that can position the Department to take advantage of the opportunities and overcome the challenges. The next edition of the Roadmap is in development and will be released in the third quarter of FY 2011.

SECTION 4 – ACTIONS TAKEN TO IMPLEMENT UAS TASK FORCE RECOMMENDATIONS

Interoperability Profiles

The UAS TF completed incorporating Unmanned Systems Interoperability Profile (USIP) 1 in the Defense Information Standards Registry (DISR). The profile has also been called out for inclusion in the latest versions of requirements documents for ERMP and the Small Tactical UAS (STUAS) program. The UAS TF updated USIP 1 to USIP 1.1 in the spring/summer of 2009. USIP is planned to be approved at the Joint Requirements Oversight Council level as the first step in formalizing Joint Capabilities Integration and Development System direction for interoperability. Additionally, interoperability profiles are planned for development to address beyond-line-of-sight transmission of full-motion video and encryption of the line-of-sight data link.

Electro -Optical /Infra-Red (EO/IR) Sensor Commonality

In an August 13, 2009 Acquisition Decision Memorandum (ADM), the USD(AT&L) directed the Army and Air Force to develop and field a highly common EO/IR sensor configuration for the MQ-1 class UAS.[8] The transition may take up to

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[8]Under Secretary of Defense for Acquisition, Technology and Logistics Memorandum, "MQ-1 Predator/Extended Range Multi Purpose (ERMP) Unmanned Aircraft Systems (UAS) Acquisition Decision Memorandum (ADM)," August 13, 2009.

three years to complete to allow time to integrate the new functionality into the design and fully certify the ball for flight.

Signals Intelligence (SIGINT) Payload Commonality

In 2008, the UAS TF completed an initial capabilities assessment of MQ-1B Predator, MQ-1C ERMP, and MQ-9 Reaper SIGINT as part of an overall effort to identify areas of commonality in UAS payloads. The UAS TF SSG recommended the generation of a comprehensive business case analysis to assess the cost, schedule, performance and operational impacts of migrating to a single SIGINT payload for the MQ-1C ERMP and MQ-9 Reaper aircraft. The Department used an independent Federally Funded Research and Development Center to assist in the analysis.

The analysis revealed that while the capability requirements documents for SIGINT sensors appear to be similar at the macro level, there are significant differences at the sensor function and technical specification level. In summary, the Army MQ-1C ERMP and Air Force MQ-9 Reaper SIGINT sensors are built to operational requirements and technical specifications, using optimum implementation techniques, which are "tuned" to the CONOPS and mission context of the respective Military Departments.

The Department's overall assessment is that there is **not** a business case at this time for combining these programs. This assessment is further supported with the decisions to end procurement of the MQ-1B Predator as stated in a June 2010 USD(AT&L) ADM which goes on to rescind the previous Military Department guidance to support an operational relevant demonstration of SIGINT payloads. The USD(AT&L) encourages instead that both Military Departments work together to leverage common architectures and interfaces, where practical, to best provide interoperable capability to the warfighter.[9]

Synergies between BAMS and GH Programs

Since Milestone B for the Navy BAMS UAS program, identifying opportunities for the RQ-4-based BAMS and Global-Hawk programs has been a significant interest item for the UAS TF and has been well documented within the Department.[10] [11] [12] Additionally, representatives from OUSD(AT&L) and Military Department acquisition leaders have met with Northrop Grumman, the prime contractor for the RQ-4, to stress the importance of managing the GH, BAMS, and Allied Ground Surveillance programs in a manner that allows the leveraging of efficiencies across the "RQ-4 Enterprise."

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[9] USD(AT&L), DoD Unmanned Aircraft Systems Signals Intelligence Report to Congress, March 2010
[10] Joint Requirements Oversight Council Memorandum 126-07, "Broad Area Maritime Surveillance Capability Development Document," May 21, 2007.
[11] Under Secretary of Defense for Acquisition, Technology and Logistics Memorandum, "Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS) Acquisition Decision Memorandum (ADM)," April 18, 2008.
[12] Joint Requirements Oversight Council Memorandum 012-09, "Broad Area Maritime Surveillance," January 21, 2009.

In 2008, the Air Force GH program and the Navy BAMS program established a Memorandum of Agreement (MOA) signed at the Program Executive Officer Level[13]. On June 12, 2010, the Chief of Naval Operations and the Chief of Staff of the Air Force signed a MOA[14] which outlines the Navy and Air Force commitment toward cooperation between BAMS and GH and establishes a joint Military Department Synergies Working Group (SWG) chartered to identify and maximize commonality and efficiency across basing, maintenance, aircraft command and control, logistics, training, and data requirements for processing, exploitation, and dissemination for the Navy BAMS and Air Force GH programs. The SWG kicked off in July, 2010, and is working closely with the UAS TF in its efforts.

Summary

The UAS TF continues to work a number of initiatives to provide more efficient and effective utilization of UAS to meet warfighter capability needs. The UAS TF will continue to pursue a clear path toward integration of UAS into the NAS to meet military operational and training needs and will advocate for the development of clear standards for airspace traffic separation and collision avoidance. Additionally, the UAS TF will continue to work with the requirements and acquisition communities to identify areas for cooperation and synergy between new and existing UAS programs. As a new initiative, the UAS TF will advocate for an enterprise plan that identifies interoperability needs to promote more effective and efficient command and control and dissemination of information. Each of these tasks require clear long-term planning and action; therefore, there is a clear and useful role for the UAS TF in the Department for the foreseeable future.

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[13] Memorandum of Agreement between United States Air Force (USAF) 303rd Aeronautical Systems Group (303AESG) and United States Navy Persistent Unmanned Aircraft Systems Program Office (PMA-262) for Coordination of Efforts Between USAF Global Hawk and USN BAMS UAS Programs, November , 2008

[14] Memorandum of Agreement between United States Navy (USN) Chief of Naval Operations (CNO) and United States Air Force (USAF) Chief of Staff of the Air Force (CSAF) for Coordination of Synergy Efforts Between USN Broad Area Maritime Surveillance Unmanned Aircraft System (BAMS UAS) MQ-4 and USAF Global Hawk (GH) RQ-4 Programs, June, 2010.