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Support for Unmanned Systems in US Public Law

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Background

- *Quick overview of current laws supporting Unmanned Systems – came about as a discussion with Dr. Robert Nullmeyer.*
  - *I had figured that most people in the field are familiar with laws and mandates with regards to Unmanned Systems.*
  - *Dr. Nullmeyer assured me that most HSI folks are not so geeky as to spend weekends reading public laws.*
  - *HSI practitioners have a high awareness of DoD directives and instructions, but pay little interest to the details embedded within massive Defense Authorization bills (or HealthCare Bills, for that matter!)*

Recommended Reading

Best overview in very readable format is by Robin Laird of SPAWAR. Highly recommended – summarizes current laws and DoD response. Document Reference is SPIE 7332-51 and the document is titled -

"Evolving U.S. Department of Defense (DoD) Unmanned Systems Research, Development, Test, Acquisition & Evaluation (RDTA&E)"

- You can obtain a copy from SPAWAR, or I'd be happy to forward it to you if you send me an email.
- I assure you it is far better reading than the full text of the actual Public Law. Robin helpfully provides the specific paragraph and section to makes it easier for us.
- Unfortunately, Robin only goes to FY07. I had to read the rest ☹

Unmanned Systems and Congress

US Congress has long recognized the emerging importance of Unmanned Systems in the future of US Defense

That, by itself, is pretty amazing…

Congress usually moves slowly and is more reactive than proactive… and almost always in responsive to imperatives from their constituents, public and corporate

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The Laws

- Unmanned Systems support was formalized in the 109th Congress, particularly by the passage of
  - Public Law 109-163:National Defense Authorization Act for Fiscal Year 2006
  - Public Law 109-364: John Warner National Defense Authorization Act for Fiscal Year 2007

- However, the groundwork was laid as far back as 2001 by the passage of Public Law 106-398 in Floyd D. Spence National Defense Authorization Act for FY 2001
- Additional support is included in NDAA FY09 and NDAA FY10. No mention in NDAA FY08

Enough, already – what's in those laws?

Public Law 106-398 (Floyd Spencer National Defense Authorization Act of 2001)

Public Law 106-398 provided the initial impetus – it set actual deployment goals for unmanned systems, out to 2015

- **By 2010, one-third of the aircraft in the operational deep strike force aircraft fleet are unmanned;**

- **By 2015, one-third of the operational ground combat vehicles are unmanned.**

Public Law 109-163 (NDAA of 2006)

PL 109-163 **required a detailed report by the DoD regarding the development and use of unmanned systems,** covering the following 12 elements

- A description of the utilization of robotics and unmanned ground vehicle systems in current military operations.
- A description of the manner in which the development of robotics and unmanned ground vehicle systems capabilities supports current major acquisition programs of the Department of Defense.
- A description, including budget estimates, of all Department programs and activities on robotics and unmanned ground vehicle systems for fiscal years 2004 through 2012, including the Joint Robotics Program and other programs and activities relating to research, development, test and evaluation, procurement, and operation and maintenance.
- A description of the long-term research and development strategy of the Department of technology for the development and integration of new robotics and unmanned ground vehicle systems capabilities in support of Department missions.
- A description of any planned demonstration or experimentation activities of the Department that will support the development and deployment of robotics and unmanned ground vehicle systems by the Department.

PL 106-163 (FY2006) – continued…

- A statement of the Department organizations currently participating in the development of new robotics or unmanned ground vehicle systems capabilities, including the specific missions of each such organization in such efforts.
- A description of the activities of the Department to collaborate with industry, academia, and other government and nongovernmental organizations in the development of new capabilities in robotics and unmanned ground vehicle systems.
- An assessment of the short-term and long-term ability of the industrial base of the United States to support the production of robotics and unmanned ground vehicle systems to meet Department requirements.
- **An assessment of the progress being made to achieve the goal established by section 220(a)(2) of Public Law 106–398 that, by 2015, one-third of operational ground combat vehicles be unmanned.**
- An assessment of international research, technology, and military capabilities in robotics an unmanned ground vehicle systems.
- A description of the role and placement of the Joint Robotics Program in the Department.
- A description of the mechanisms of the Department for coordinating pre-systems development and demonstration funding for robotics and unmanned ground vehicle systems.

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Public Law 109-364 (FY07)

PL 109-364 goes further and establishes formal policies for DoD Unmanned Systems RDT&E to include :

- An identification of missions and mission requirements, including mission requirements for the military departments and joint mission requirements, for which unmanned systems may replace manned systems.

- **A preference for unmanned systems in acquisition programs for new systems, including a requirement under any such program for the development of a manned system for a certification that an unmanned system is incapable of meeting program requirements.**

- An assessment of the circumstances under which it would be appropriate to pursue joint development and procurement of unmanned systems and components of unmanned systems.

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PL 109-364 (FY07) continued…

- The transition of unmanned systems unique to one military department to joint systems, when appropriate.

- An organizational structure for effective management, coordination, and budgeting for the development and procurement of unmanned systems, including an assessment of the feasibility and advisability of designating a single department or other element of the Department of Defense to act as executive agent for the Department on unmanned systems.

- The integration of unmanned and manned systems to enhance support of the missions identified in paragraph (1).

Public Law 110-181 (FY 2008)

- National Defense Authorization Act 2008
  - Curiously, no mention of Unmanned Systems at all
  - Appears to be giving DoD some time to absorb and react to earlier requirements.

PL 110-417 (FY 2009)

- Duncan Hunter National Defense Authorization Act 2009
  - Sec 144: Requirement for Common Ground Stations and Payloads for Manned and Unmanned aerial vehicle systems
- Then Congress goes on to ‘scold’ the DoD…

PL 110-417 (FY09) Cont…

In Sec 1036, Congress makes the following findings:

- Unmanned aerial systems (UAS) of the Department of Defense, like the Predator and the Global Hawk, have become a critical component of military operations. Unmanned aerial systems are indispensable in the conflict against terrorism and the campaigns in Afghanistan and Iraq.

- Unmanned aerial systems of the Department of Defense must operate in the National Airspace system (NAS) for training, operational support to the combatant commands, and support to domestic authorities in emergencies and national disasters.

- **The Department of Defense has been lax in developing certifications of airworthiness for unmanned aerial systems, qualifications for operators of unmanned aerial systems, databases on safety matters relating to unmanned aerial systems, and standards, technology, and procedures that are necessary for routine access of unmanned aerial systems to the National Airspace System.**

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Sec 1036 goes on….

- It is vital for the Department of Defense and the Federal Aviation Administration to collaborate closely to achieve progress in gaining access for unmanned aerial systems to the National Airspace System to support military requirements.
- The Department of Defense and the Federal Aviation Administration have jointly and separately taken significant actions to improve the access of unmanned aerial systems of the Department of Defense to the National Airspace System**, but overall, the pace of progress in access of such systems to the National Airspace System has been insufficient and poses a threat to national security.**
- Techniques and procedures can be rapidly acquired or developed to temporarily permit safe operations of unmanned aerial systems in the National Airspace System until permanent safe operations of such systems in the National Airspace System can be achieved.
- Identifying, developing, approving, implementing, and monitoring the adequacy of these techniques and procedures **may require the establishment of a joint Department of Defense-Federal Aviation Administration executive committee** reporting to the highest levels of the Department of Defense and the Federal Aviation Administration on matters relating to the access of unmanned aerial systems of the Department of Defense to the National Airspace System.

Public Law 111-84 (FY10)

PL 111-84 National Defense Authorization Act FY10

- Sec 142 – requirement for Joint Requirements Oversight Council to approve joint and common requirement for an unmanned cargo-carrying capable aerial vehicle type.
- Sec 143 – requirement for modification of nature of data link for use by tactical unmanned aerial vehicles. (Replacement for Tactical Common Data Link Standard)
- Sec 935- Requirement for SecDef and the SecTrans in consultation with the Secretary Homeland Security to jointly develop a plan for providing expanded access to the national airspace for unmanned aircraft systems of the Department of Defense.

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So where do we stand now?

- Was PL109-364 the tipping point? It takes years for new programs to get funded, so although the law was passed in FY07, we should be beginning to see the effects now.

- PL 106-398 of 2001 set lofty goals. We are in 2010 now, and although we have seen a spectacular increase in the deployment of unmanned systems, I don't believe we have reached the threshold of 1/3 of the Deep Strike force being unmanned (maybe we have, that would probably be classified info anyway)

- The 2015 target for 1/3 of the Ground Vehicles being unmanned seems unrealistic from a 2010 perspective, especially in light of the funding setbacks for the FCS program and the Operational demands of Iraq and Afghanistan.

Impacts

- Formation of the Joint Ground Robotics Enterprise (GRE) in 2006 (formerly the Joint Robotics Program, originally instituted in 1989)
- JGRE has provided impetus to development of the Consolidated Unmanned Systems Roadmap of 2007, (updated 2009) going out to 2032 and beyond.
- Awareness and acceptance across all services of the importance and utility of Unmanned Systems
- The momentum towards unmanned systems is building, and we need to be prepared to take on the HSI challenges that will accompany deployments on a scale required by PL 106-398

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THANK YOU FOR ATTENDING THE UNMANNED SYSTEMS SPECIAL INTEREST GROUP!

PLEASE SPREAD THE WORD…