The Association for Unmanned Vehicle Systems International

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Unmanned Aircraft Systems: An Industry Perspective

Unmanned Aircraft Systems Action Summit 5:
Emerging Trends in UAS – Looking to the Future
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Alerus Center, Grand Forks, North Dakota

Presented by:

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Association for Unmanned Vehicle Systems International

(AUVSI)

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About AUVSI

The mission of AUVSI is to promote and support the unmanned systems industry through communication, education and leadership

- In its 38th year, AUVSI is the ***world's largest non-profit organization*** devoted exclusively to unmanned systems

- AUVSI represents more than ***6,000 members*** from ***2,100 organizations*** in ***55 allied countries***

- ***Diverse membership*** from industry, government and academia

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AUVSI Events

- AUVSI's Unmanned Systems North America Symposium and Exhibition

  - The World's Largest Unmanned Systems Event

  - Over 6,500 Delegates and 450 Exhibitors from more than 30 Countries

  - 150+ Technical Presentations

- AUVSI's Unmanned Systems Program Review

  - Military and Civilian Government Agency Updates on Unmanned Systems Programs

  - Specific Days Targeted to Air, Ground and Maritime Systems

  - 600 Attendees

- International Conferences and Tradeshows – Asia-Pacific, Canada, East Asia, Europe, Middle East

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UAS: A Booming Industry

- The UAS market, both defense and civil, is a promising segment in the aerospace industry, and one that has the potential to create tens of thousands of new jobs in the coming years.

- However, for these jobs to materialize, federal regulations on the use of UAS in the NAS must be addressed.

- Globally, the unmanned systems market was estimated to be between **$5.5 billion and $6 billion dollars in 2010**, growing at the rate of between 3 – 5% over the next decade.

- Over the next ten years, there are a few factors that will influence market growth either positively or negatively:

  1. Access to Airspace

  2. Expansion of civil/commercial UAS operations

  3. Global Conflict – particularly U.S. and allied nation involvement in future conflicts

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# AUVSI's Advocacy Efforts on Behalf of the Industry

- AUVSI is becoming the go-to advocacy source for staffers and Members on Capitol Hill. Our Advocacy Team is on the Hill regularly.

  - As an example: The only changes made to the UAS sections of the House FAA bill were made at the request of AUVSI. Our suggestions were often taken word-for-word

- FAA Small UAS Rulemaking Roadshow
  - AUVSI will utilize our Chapters and work with industry to collect comments to the proposed small UAS rule when it's released later this year
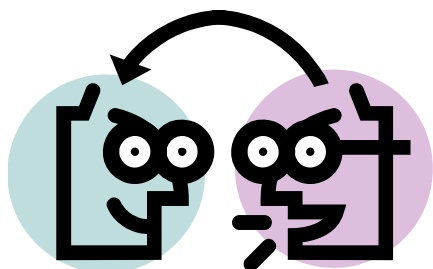
  - It is critical that as an industry, we provide comments to the FAA – they are relying on all of us to provide them with the technical data they need

www.auvsi.org

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Access to Airspace – What is Being Done

- For the first time ever, an FAA reauthorization bill will include language on UAS

  - The last time Congress passed a major FAA reauthorization bill was back in 2003

  - The FAA is currently operating under their 19th extension

- The Senate passed their FAA bill on 17 March (S. 223), and the House followed on 1 April (H.R. 658). A final bill is currently being negotiated in conference. You can find a copy of the bills on our Advocacy Documents website at www.auvsi.org

- Both FAA bills include language requiring the FAA to:
  - Develop a comprehensive plan on integrating UAS into the NAS,
  - Include language creating test sites,
  - Call for the creation of industry standards,
  - Simplify and shorten the current certificate of authorization (COA) process.

FAA Bill – What AUVSI is Advocating For

- The provisions AUVSI would like to see in the final FAA bill include:

  - Setting a deadline of 30 Sept., 2015 for the FAA to integrate civil UAS into the NAS

  - Creating 6 unmanned aircraft test sites

  - Allowing UAS to fly beyond line-of-sight, 24/7, in the U.S. Arctic

  - Allowing for the expedited access into the NAS for public safety agencies (such as law enforcement and fire departments)

  - Defining small unmanned aircraft as weighing less than 55 pounds

  - Consulting with the unmanned aircraft systems industry when setting policies and standards

  - Annual reports to Congress on UAS activities

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NextGen and UAS
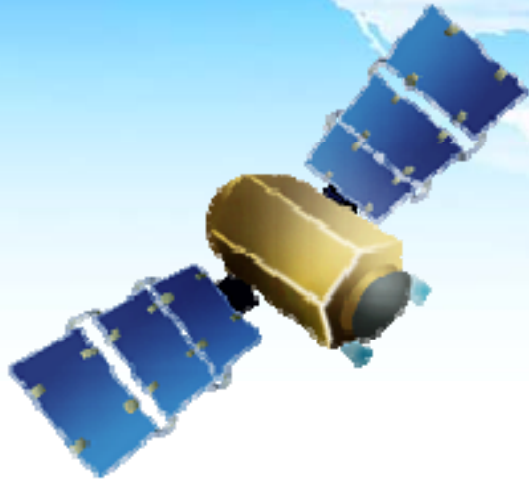
- First and foremost, our industry must ensure that UAS are included in NextGen development and implementation – because the future of aviation will undoubtedly include UAS

  - Through AUVSI's Advocacy efforts, the FAA bill now includes language requiring UAS industry participation

- Sense and Avoid Technology
  - In order for pilots, controllers, and the public to become assured that UAS can fly safely in unsegregated airspace – our industry needs to prove that our platforms can sense and avoid other aircraft
    - This is a technical challenge – but we're making significant progress

  - An important part of NextGen is Automatic Dependent Surveillance Broadcast (**ADS-B**), which will help UAS broadcast its location to other pilots and controllers

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The Civil Market

- DOD will most likely remain the top UAS market for the near term

- However, once UAS are granted more access to the NAS, the civil market has the potential to eclipse the defense market

- Law Enforcement and First Responders (fire, rescue, EMS) are two of the most wide-spread, non-defense UAS applications.

  - As smaller platforms mature and gain access to the NAS, more local **police** and **fire** departments will purchase small UAS, which they will use to protect public safety.

- Although first responders will likely be the next mass users of UAS, there are dozens of other civil applications ……..

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Non-Military UAS Applications	
Border Surveillance	Pipe/Power Line Surveillance
Suspect Tracking	Agricultural Applications
Traffic Monitoring	Communications/Broadcast
Disaster Response/Relief	Movie Production
Damage Assessment	Aerial News Coverage
Atmospheric/Weather Research	Mail/Freight Transport
Critical Infrastructure Monitoring	Flood Mapping
Damage Surveying	Real-estate Mapping
Aerial Photography	Mining
Wildlife Monitoring	Sporting Event Coverage

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Challenges Facing UAS

- Access to the NAS

- Sense and Avoid

- Risk Acceptance/Public Acceptance

- Standards/Certification/Training

- Power/Energy

- Communications/Frequency Spectrum

- Cyber Security

- Liability and Insurance

- Export Controls

- Civil Liberties

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Opportunities

- What I wouldn't give to be 19 years younger

- Technical maturation will continue, which will allow us to safely field UAS in the NAS

  - There are systems and uses we haven't even dreamed of yet

  - However, for this new industry to flourish, we need government regulations to catch up

    - Laws and Regulations don't come out of thin air. They require a lot of work, data collection and analysis, education, and persistence, but most of all, leadership.

    - So, get involved in a standards setting body, write the FAA, contact your federal and state representatives, or spend some time at a school talking about the importance of robotics and Science, Technology, Engineering, and Mathematics (STEM).

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GET INVOLVED

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Questions?

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- Questions or suggestions regarding AUVSI's Advocacy efforts - contact:

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