

UAS / Drone Capabilities – and Washington's Emerging Ecosystem

Tom Hagen

Applications of UAS / Drones in Washington Workshop

June 23, 2018

Imagine...2050



The Power of Innovation



Back to the Past...and the Present

- The word “Drone”
- Defense-focused
- 1988 – Boeing Condor
- 1992 – Insitu ScanEagle
- 2008 – Boeing acquires Insitu
- 2013 – Commercialization
- Today – “Normalization”



By the Numbers

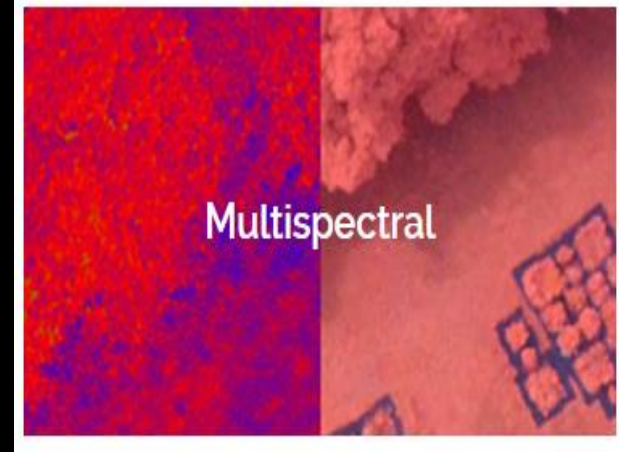
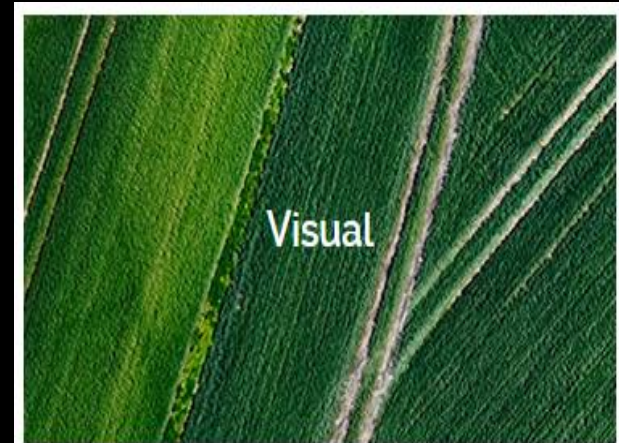
- 1,200,000 – Drones registered in U.S.
- 1,100,000 – “Small model” UAS fleet in 2017
- 2,400,000 – Small model fleet in 2022 (AGR 16.9%)
- 110,604 – Commercial, small non-model UAS fleet in 2017
- 451,800 – Commercial fleet by 2022 (AGR 32.5%)
- 122,000 – Remote Pilots certificated
- 301,000 – Remote Pilots forecast for 2022
- 36,000 – Estimate of law enforcement UAS by 2035
- \$500M+ – Investment capital for 2018
- \$100B - \$125B – UAS market estimate for this decade

Operational Missions

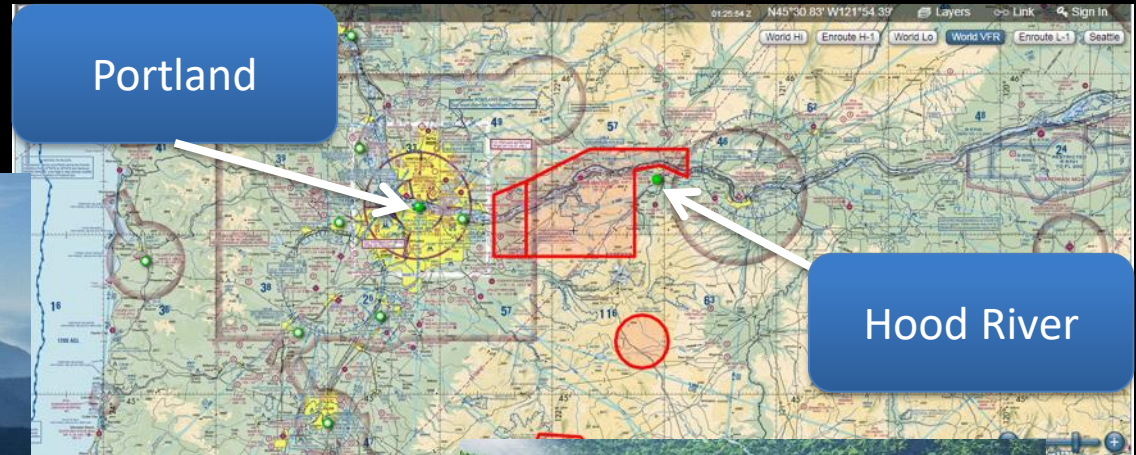
- Infrastructure inspections
- Real estate / aerial photography
- Precision agriculture
- Insurance claims
- Research and development
- Search and Rescue
- Resource management
- Mining
- Media coverage
- First responder support
- Security



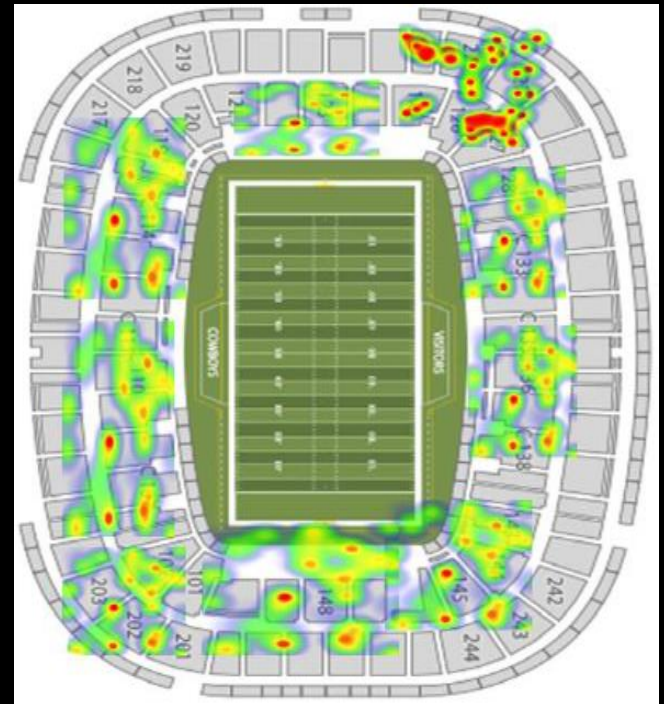
Technologies on the Farm



Fire Monitoring / Suppression



Communications



Package Delivery



First Responders – “HADR”



Why Washington?

- Critical mass of aerospace firms
- Skilled workforce – 130,000 aerospace workers plus support
- Advanced materials companies
- Information and communication technology businesses
- Strong academia baseline / workforce development



Washington has a purpose built drone ecosystem today!

The Washington "Drone" Industry Today



Workforce Opportunities

- Engineering
 - Operations
 - Data Collection, Exploitation, Dissemination
 - Imagery Analysis
 - Communications
 - Avionics and Payloads
 - Airframes and Propulsion
 - Counter UAS
 - Field Support
 - Marketing
 - First Responders
 - Attorneys
 - Insurance Human Factors
 - Advanced Manufacturing
 - Regulators
 - Flight Test Operations/Management
 - Science and Research
 - Air Traffic Controllers
 - Consultants
- ...and many more!

The Emerging Drone Ecosystem

- Poised to help feed those 9B people in 2050 and do more
- Open for business - building on a strong aerospace foundation
- Existing partnerships ripe for innovation
 - Academia
 - Industry
 - Government
 - Trade associations, clusters –
and YOU!



Why not us? Let's lead the drone world into the future!

Contact Info

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AUVSI Cascade Chapter

www.auvsi.org/members/chapters/cascade-chapter

AUVSI Cascade Coming Events

- Networking Events – 4:30 – 7 pm
 - July 10th - Portland, OR
 - Co-hosted by Schwabe, Williamson & Wyatt, PLC
 - July 19th – Seattle, WA
 - Co-hosted by Perkins Coie, PLC
- “Drones and Droids: Unmanned Systems at Work”
 - September 26th and 27th – Hillsboro, OR
 - Co-hosted by Intel





More information is available on our website:
www.auvsi.org/members/chapters/cascade-chapter