Taking Off With Drones

December 4, 2017
3:45 – 4:45 Workshop Block II

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Taking Off With Drones

- Regulations
- UAV/Drone Implementation & your agency
- Example Applications
- Q & A

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Taking Off With Drones - Regulations

• August 2016 – FAA Releases Part 107 Remote Pilot Certification

  This enables commercial operation in much less restrictive airspace – opened up the industry

• Flight was possible prior to this, but only under a 333 exemption and required a licensed aircraft pilot
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- Section 333 Exemption Airspace Restriction Map
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• Hobbyist Airspace Restriction Map
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• Part 107 Airspace Restriction Map
Taking Off With Drones – Regulations
Part 107 Regulations are similar to previous rules, but lay out some basic guidelines for operations:

• Must be registered
• Within Line-of-sight
• Fly less than 100mph
• Operate only during daylight hours
• Fly less than 400-ft (above ground level) unless in the envelope of a building/structure
• Do not operate over people or vehicles not involved in the flight
• Etc...
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Additionally in Minnesota:

• Must ALSO be registered with MNDOT
• Must be licensed with MN/DOT as a Commercial Operator (requires proof of insurance) This is a somewhat short list
• Sales tax paid on UAV/Drone
• Updated/Paid Yearly
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Unfortunately Still “Regulating by Incident”
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Upcoming White House Proposed Rulemaking to integrate UAVs into the national airspace:

- Splitting the Airspace at 200-ft AGL
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Agencies may be expected/asked to regulate the >200ft airspace by various decision makers

How will you react? Prepared to go against FAA?
Taking Off With Drones – Implementation

• “Disruptive” technology appears to be settling down
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- Education and Licensing are constant discussions
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PRODUCTION
Taking Off With Drones - Implementation

Buy & Fly vs. Hire Out/Consult:

Hire Out/Consult
- MNDOT Registration/Insurance Requirements
- Processing of outputs
- Aerial fleet maintenance
- Frequent changes in technology

Buy & Fly
- Accessibility of Products
- Long term cost benefits
- Higher adoption/uptake rate
- Easier to control use and distribution
Taking Off With Drones – Example Applications

- Number one Requests are IMAGERY
Taking Off With Drones – Example Applications
Taking Off With Drones – Example Applications
Taking Off With Drones – Example Applications

Annotation & Measurement

- Location
- Distance
- Area
- Volume

<table>
<thead>
<tr>
<th>Title</th>
<th>Area</th>
<th>Cut</th>
<th>Fill</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.279 acres</td>
<td>2460.5 y³</td>
<td>-23.4 y³</td>
<td>2437.1 y³</td>
</tr>
</tbody>
</table>

Base Plane
Best Fit

Have a conversation about this annotation with DroneDeploy users you share this map with.

Add a comment
Taking Off With Drones – Example Applications
Taking Off With Drones – Example Applications
Taking Off With Drones – Example Applications

- MNDOT Pilot Bridge Inspections
Taking Off With Drones – Lessons Learned

• Landscape is changing/variable – the importance of knowing what kind of rules/regs are proposed and upcoming is HIGH
• Awareness is High, knowledge of actual capabilities is low
• EDUCATION is a public and constant need
• Privacy concerns are REAL and still a gray area
Taking Off With Drones – The Future

• Drones are NOT replacing surveyors

• Accuracy of Photogrammetry Deliverables is still “mapping grade” and requires immense effort and/or investment to accomplish higher order accuracy

• More/Advanced sensors are being hung from drones, not just cameras
  • LiDar
  • Multispectral
  • NDVI – Plant Health
  • Green laser technology (water penetrating)

• Integration of Machine Learning/AI – to identify what the camera sees
Taking Off With Drones

- Q & A

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