



UAS - A Business Decision in Private Practice

Unmanned Aircraft Systems (UAS) forum

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Joint Forces Headquarters (JFHQ) Building

1636 Gold Star Dr./Auditorium

Raleigh, NC 27607-3371

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ABOUT ESP



➤ *ESP is a multidisciplinary Engineering Surveying and Planning Company*

➤ **Extremely interested in UAS**

- Invested 10's of thousands of \$'s attending seminars/training to date/Equipment trials
- Collected data on 2 projects over the past 3 years
- Set control, QA/QC surveys and used data on 2 DoD projects
- Had representation or was in responsible charge of project field data collection where UAS was used by others to supplement our field data
- Have accepted and work with data collected from multiple vendors
 - Real issue – Hard to get
- We know what the data looks and feels like

➤ **First the Punchline**



“Heck Yes!”

WILD WILD

WEST

Practical Steps Forward

- Navigating the Laws/Regulations
- Choosing the Right Technology
- Teaming Partners
- Expect and Plan for a steep curve
- Go Big or play “small ball”

Potential Markets Broad Sense

Flight Operations

- Sales
- Training/Maintenance/Repair
- Flight Planning/Sensor Integration
- Pilots

Data Processing

- Cad/GIS Technicians
- Photogrammetrist
- Software Specialists

Post Mission

- Calibration
- Field/Mission Compliance
- QA/QC

Data Management

- IT
- Storage/Retrieval (team)
- Data Compression
- Security
- Enterprise Solutions

Delivery

- Formatting
- Interoperability
- Compliance
- Serving

Potential Applications for Private Practices

- • Precision Agriculture
- • Construction management
- • Infrastructure inspection
- • Open pit mining, stock pile inventory
- Landfill management
- Topographic and Orthophoto mapping
- Search & Rescue
- Aerial photography – real estate and marketing
- Film making
- Wild fire detection and management
- Disaster relief and response
- Wildlife research and protection
- Environmental management & monitoring
- Journalism
- Border patrol
- Law enforcement surveillance


Pitfalls, Exposure, Liabilities

- Where can I work legally
- Shelf life of Software
- Shelf life of Equipment
 - Technology – Half price
 - Hardware – Half Weight
 - Precision – Twice Speed/twice as dense

Race to the Bottom

- Almost 600 COA's as of last month
- Unknown number of Bandits running around
- Non-Professionals that are completely ignorant to regulations/rules/laws

Real Expectations – Precision

- DTM vs. DSM
 - Metric camera vs. DSLR type (consumer grade) cameras
 - LiDAR
 - IMU
 - More Power = More Weight
 - More Weight = More Expense
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Investment

- I am human – I can't make one up
- I can't tell you when I can use this technology
- Rapid Rabid changes coming in Hardware
- Unpredictable Laws/Regulations
- Why would I invest up to \$250K in a solution:
 - That I can't legally use today
 - That I really don't know WHEN I am going to be able to use
 - That will weigh half of what it does today when I can finally use it
 - Will collect twice the data of what it does today when I can finally use it
 - Will cost half what I paid for it by the time I can use it

Practical Steps Forward

- Keep it within the laws
 - Get a specialized attorney for Guidance
- Make sure your customer understands the limitations
- Private/Public Partnerships
- Private/Vendor Partnerships
- Buy your CFO a Good bottle of Wine

➤ **Now The Joke and Punchline**

- *Would I buy one today?*



“Heck Yes!”

The Business Decision

- There is not a good ROI case
- Need to stay involved to stay up with the Technology
- Holding onto Market Share
- Can be staged
- Software can be same as what you are using today
- Do your Research

Credits

- MTSI – MAPPS 2014 Winter Conference – Paul Morgan
- AUVERSI – 2013 – Unmanned Aircraft Systems Regulations and Sensors – Mario Mairena
- Trimble – MAPPS 2014 – UAV use and lessons learned - George Southard

