

Unmanned Aircraft Use In Agriculture

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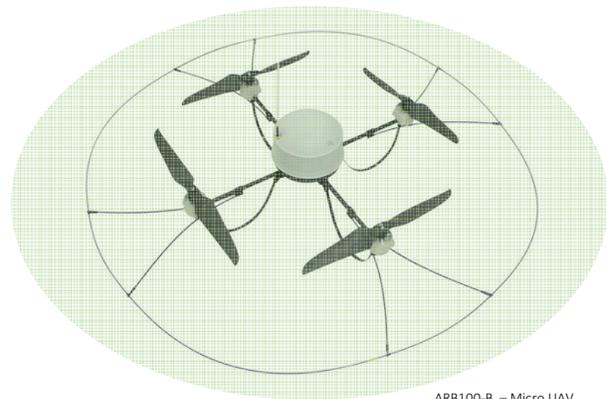


Unmanned Aircraft – Terms / Types

sUAS Micro Unmanned Aerial System

Military

Agricultural



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Unmanned Aircraft – Terms / Types

sUAS – **small** Unmanned Aerial System

Military



Raven – Small UAV

Agricultural



MX-Sight UAV – Small UAV

MX-Sight UAV used for vegetation stress monitoring project Spain / California

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Unmanned Aircraft – Terms / Types

UAV – Unmanned Aerial Vehicle

Military

Short Range Tactical UAV



Marine Corps – Pioneer UAV

Agricultural

Large Agricultural UAV



Arcangel 1 – ADP Uruguay

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Unmanned Aircraft – Terms / Types

Military



Shiebel - CamCopter

UAV – Unmanned Aerial Vehicle

Agricultural

Large Agricultural UAV

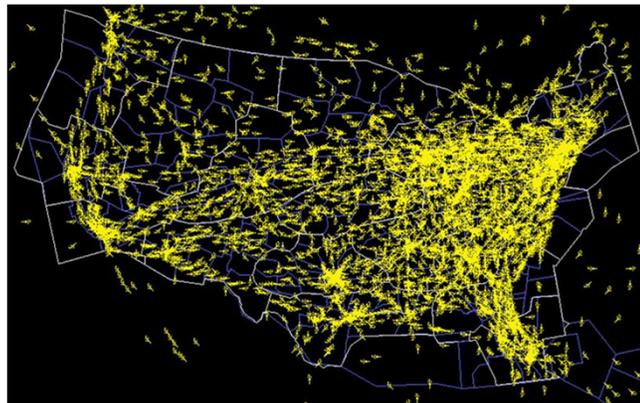


Yamaha – RMAX

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The National Airspace

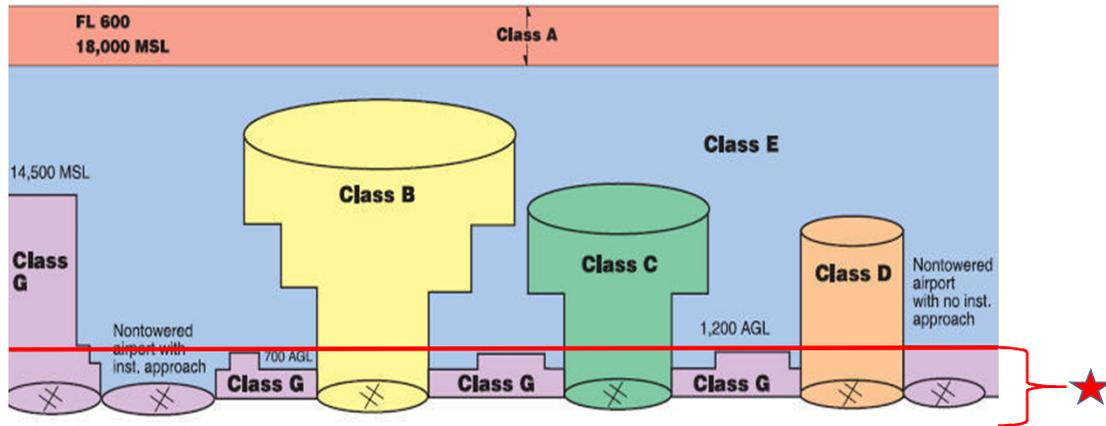
- Largest most complex air traffic system in the world.
- Administered by the Federal Aviation Authority
- 14,000 Air traffic controllers
- 19,000 Airports / Air strips)
- Average of 50,000 flights a day



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The National Airspace – Airspace Classes

Airspace Classification



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The FAA

Ways UAVs certified for operation in the NAS

State Entities (Sheriffs Departments, State Universities) – Certificate of Authorization (COA)

Web based application process requiring hundreds of pages of supporting technical documentation. Several hundred have been issued, they are geographically limited, can and are revoked.

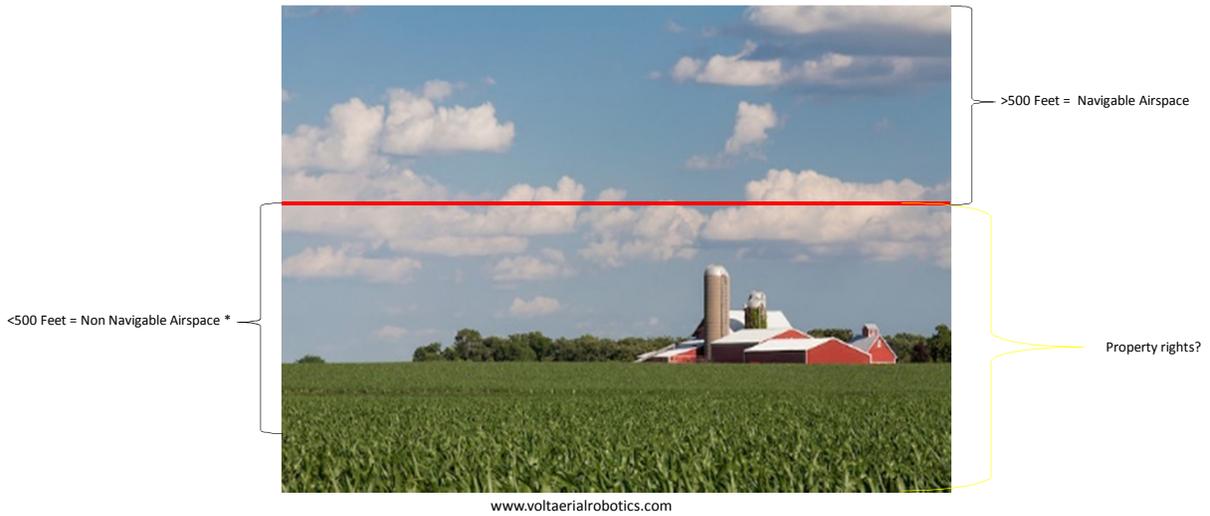
Private Commercial Entities – Special Airworthiness Certificate

Paper based application process, single individual at the FAA responsible for entire nation, less than 90 issues in the history of the FAA for UAV use. Very low success rate for applications.

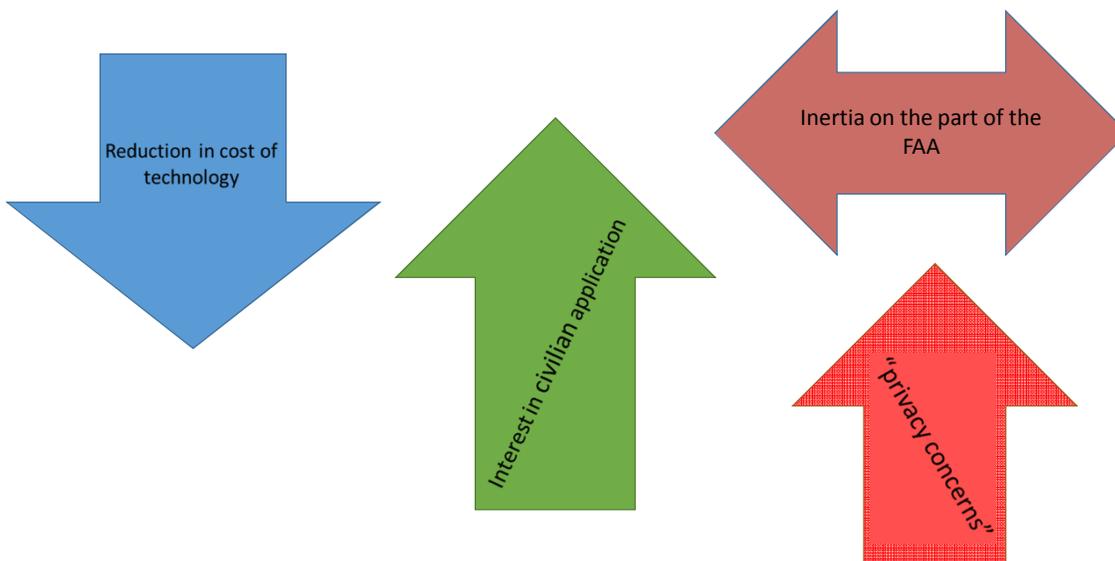
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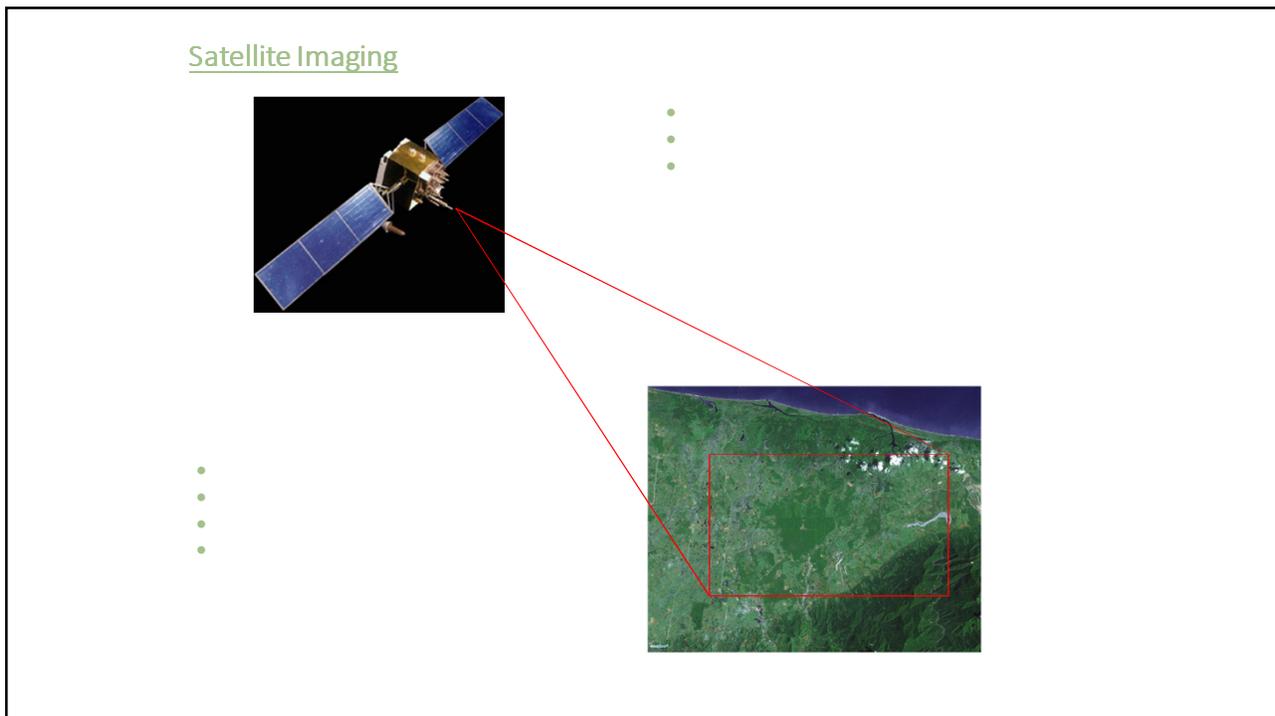
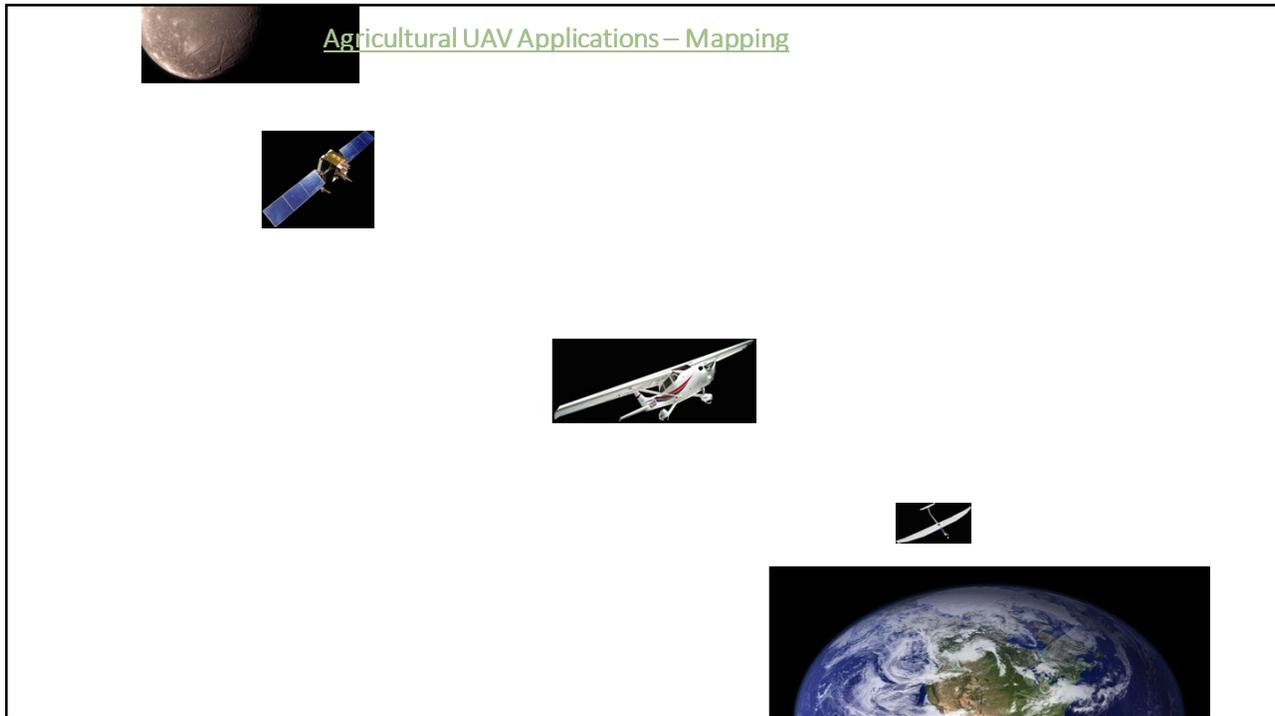
Civilian UAV Use

Can I fly a UAV? – Yes! No! Maybe!



Civilian UAV Use - Moving forward

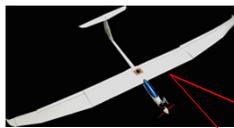




Aircraft



Micro UAV Imaging



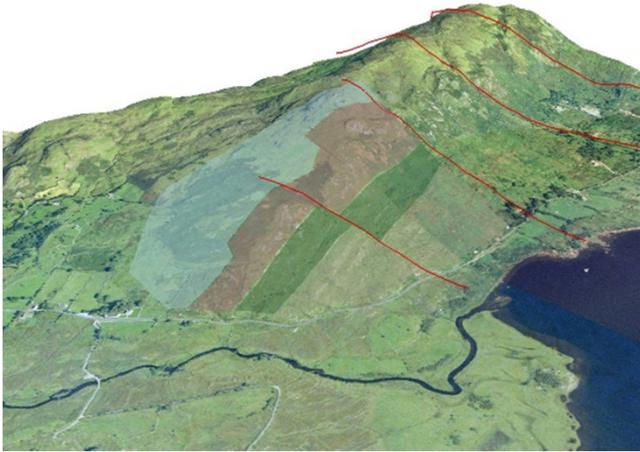
UAV Imaging - Resolution



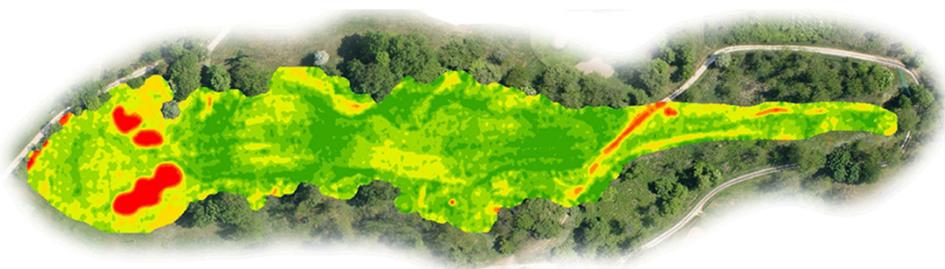
UAV Produced Maps



UAV Produced Maps



UAV Produced Maps



UAV Produced Maps



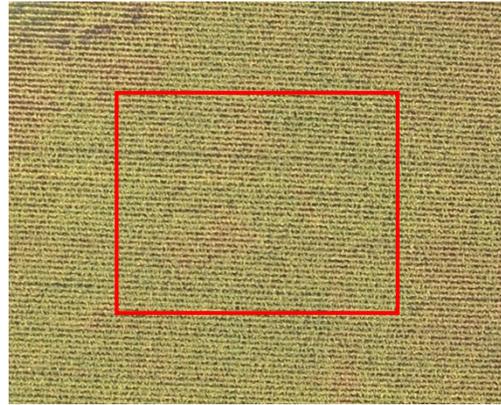
Agricultural UAV Applications – Scouting

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Agricultural UAV Applications – Population Counting

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Agricultural UAV Applications – Crop Dusting

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