Drones in Mapping

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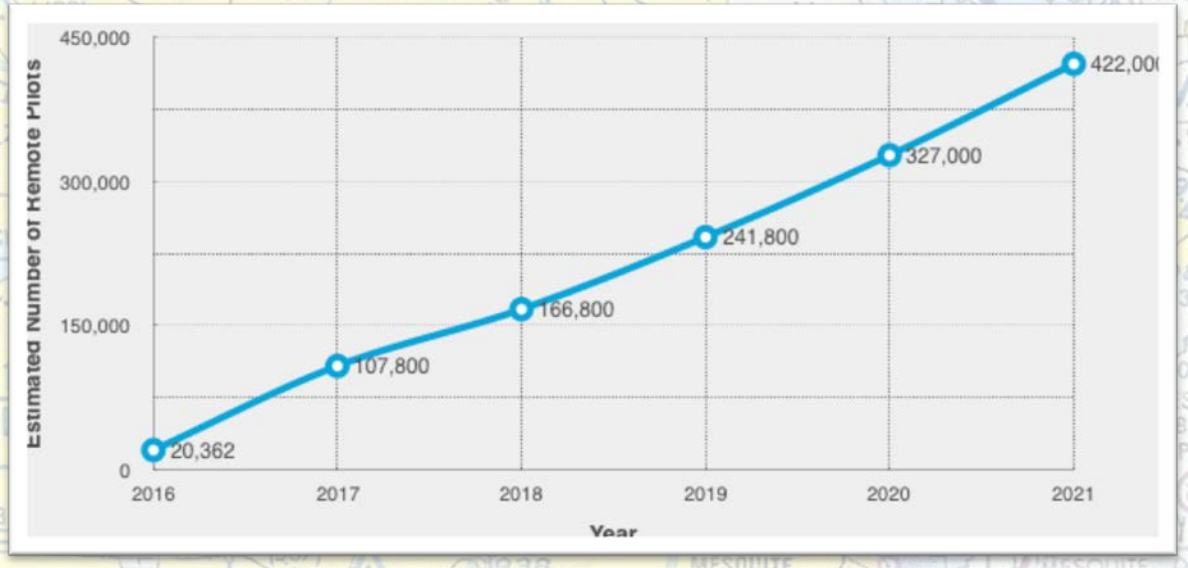
Fast Growing Field

- **On Aug. 29, 2016 commercial drone pilots were required to have a remote pilot certificate.**
- **In the first year the FAA issued 60,000 certificates.**

http://www.aviationtoday.com/2017/09/07/us-now-60000-part-107-drone-pilots/



http://dronetribe.io/unmanned-aircraft-systems-new-forecast-data-faa/

Who will pilot the UAS?

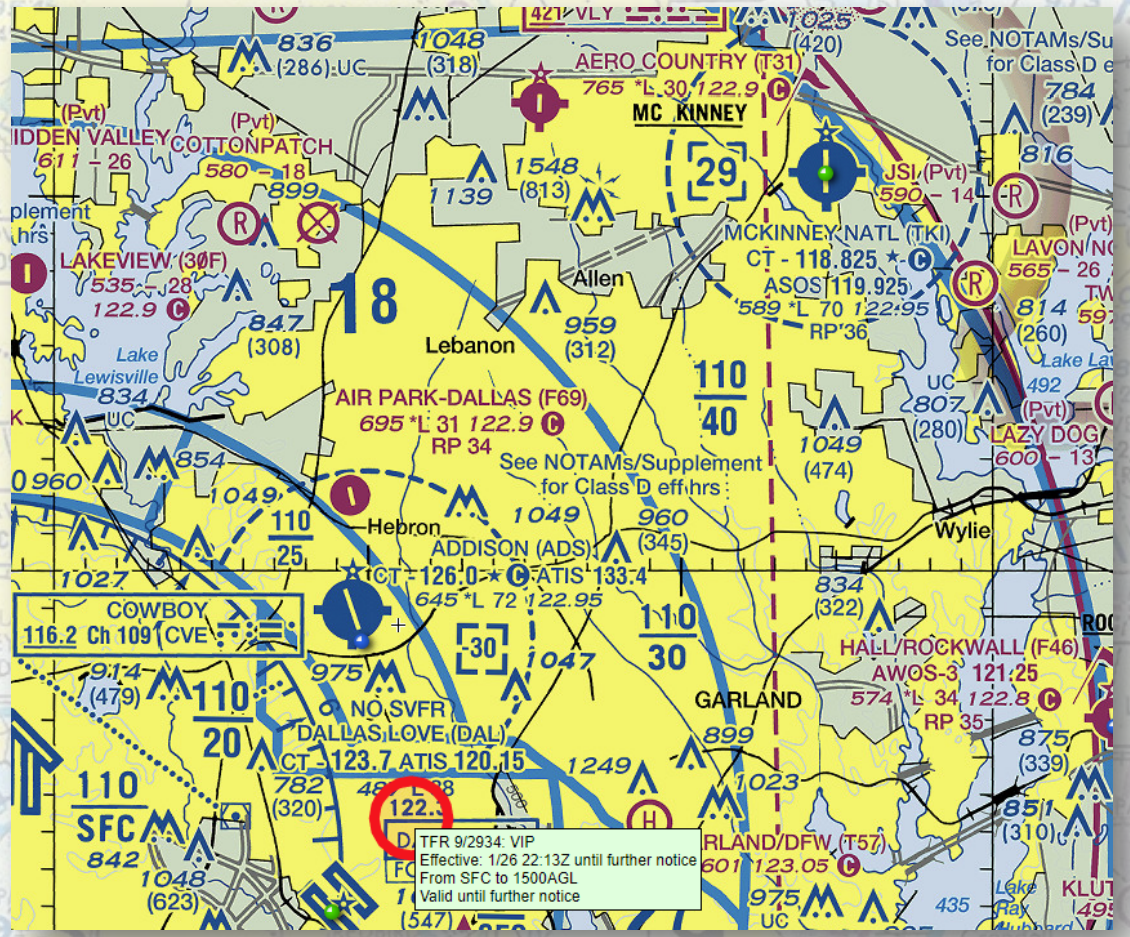
- **New pilots**
  - **Must pass the airmen knowledge test.**
  - **Register with the FAA IACRA (Integrated Airman Certification and Rating Application) to get license.**
- **Pilots Certificate holders**
  - **Can either pass the airmen knowledge test or complete FAA Safety Team UAS training course.**
  - **Meet with FAA approved instructor or examinor to submit paperwork.**

What drone do you need?

- **What type of sensors will you need?**
  - **Resolution of camera, thermal imaging, LiDAR, near IR, etc.**
- **Can the drone be modified to add new capabilities?**
- **What conditions will you flying in?**

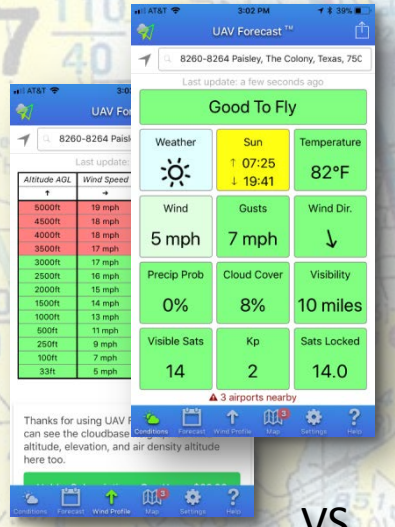
What do you need to fly?

- **Check Aviation Charts and FAA for temporary flight restrictions.**
- **Weather Conditions**
- **Notify nearby airports or heliports of flight.**
- **Pre-Flight check list**
- **Flight Log**
- **Survey the site before you fly.**



Useful Items and Resources

- High Visibility Vest
- Apps:
  - Drone Forecast, B4U Fly
- Websites:
  - FAA.gov
  - FAA Open data http://uas-faa.opendata.arcgis.com/
  - https://droneweather.ch/
  - Skyvector.com



VS.

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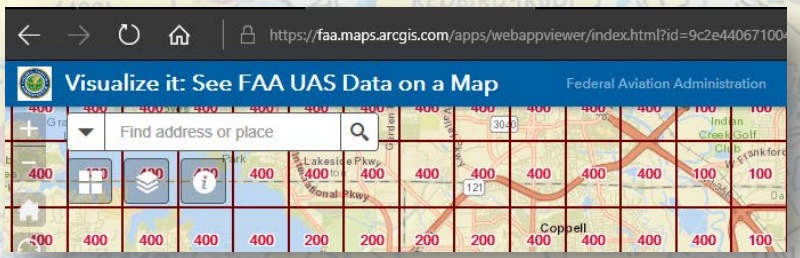
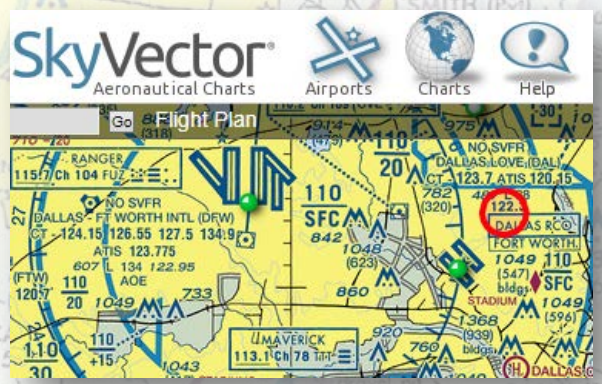
meteomatics
Your Experts in Weather Data Processing.



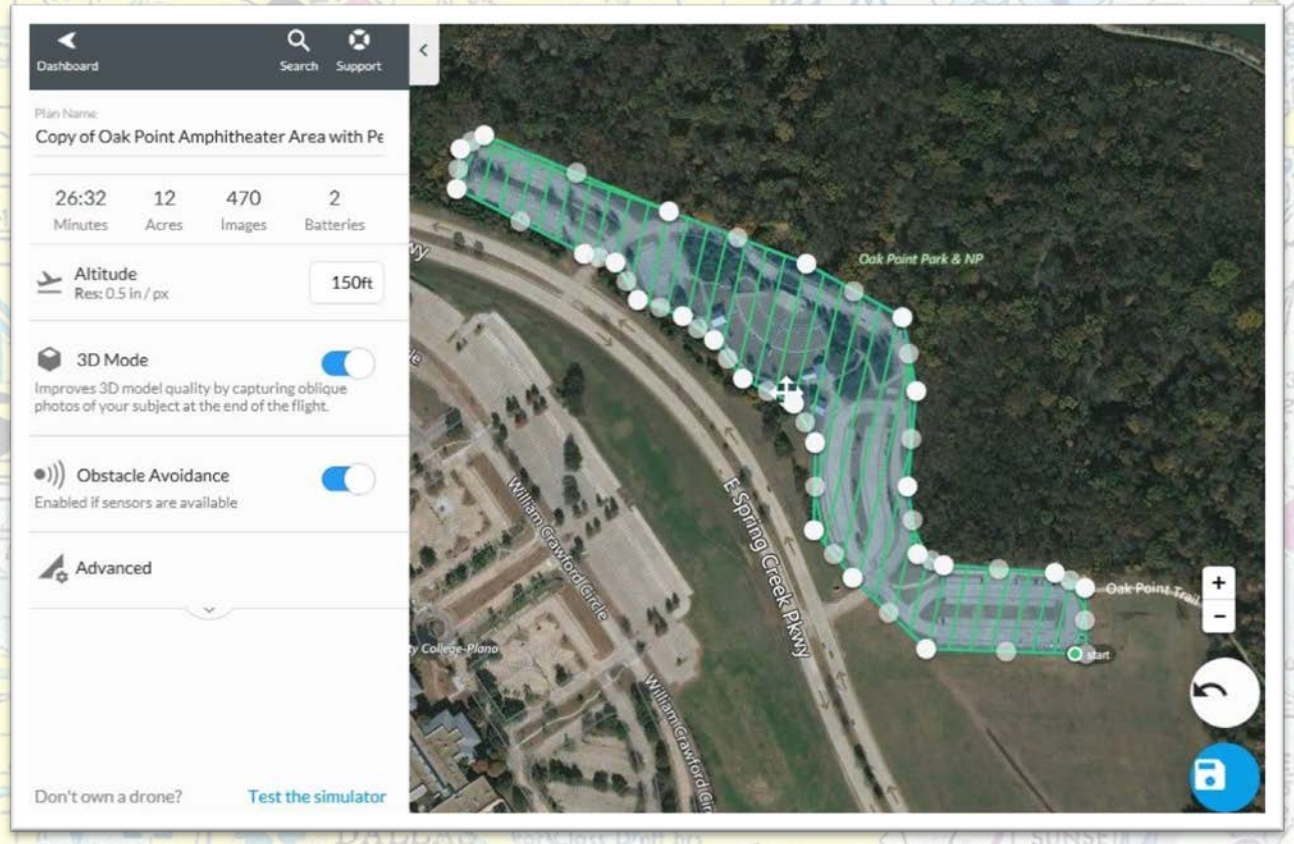


Oak Point Park

- Flight covered 12 acres
- Flown with a DJI Phantom 4 Pro with a 20MP camera
- 3 separate flight areas
- Collected 1,238 images over 4 hour

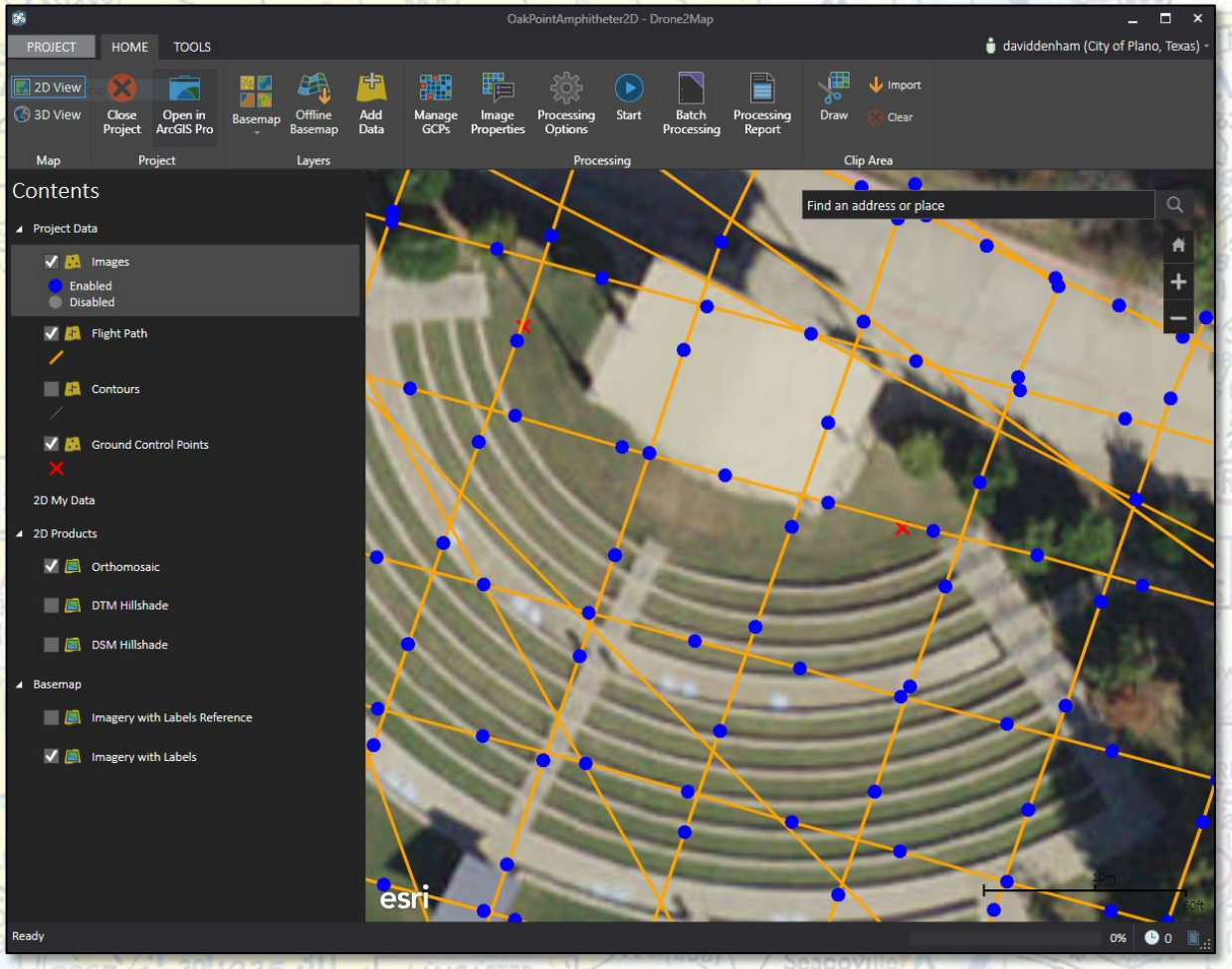
Planning the Flight Path

- Used Drone Deploy to design the flight path
- Flew at 150 ft.
- Enabled 3D mode to fly perimeter and take oblique images
- 75% sidelap and frontlap

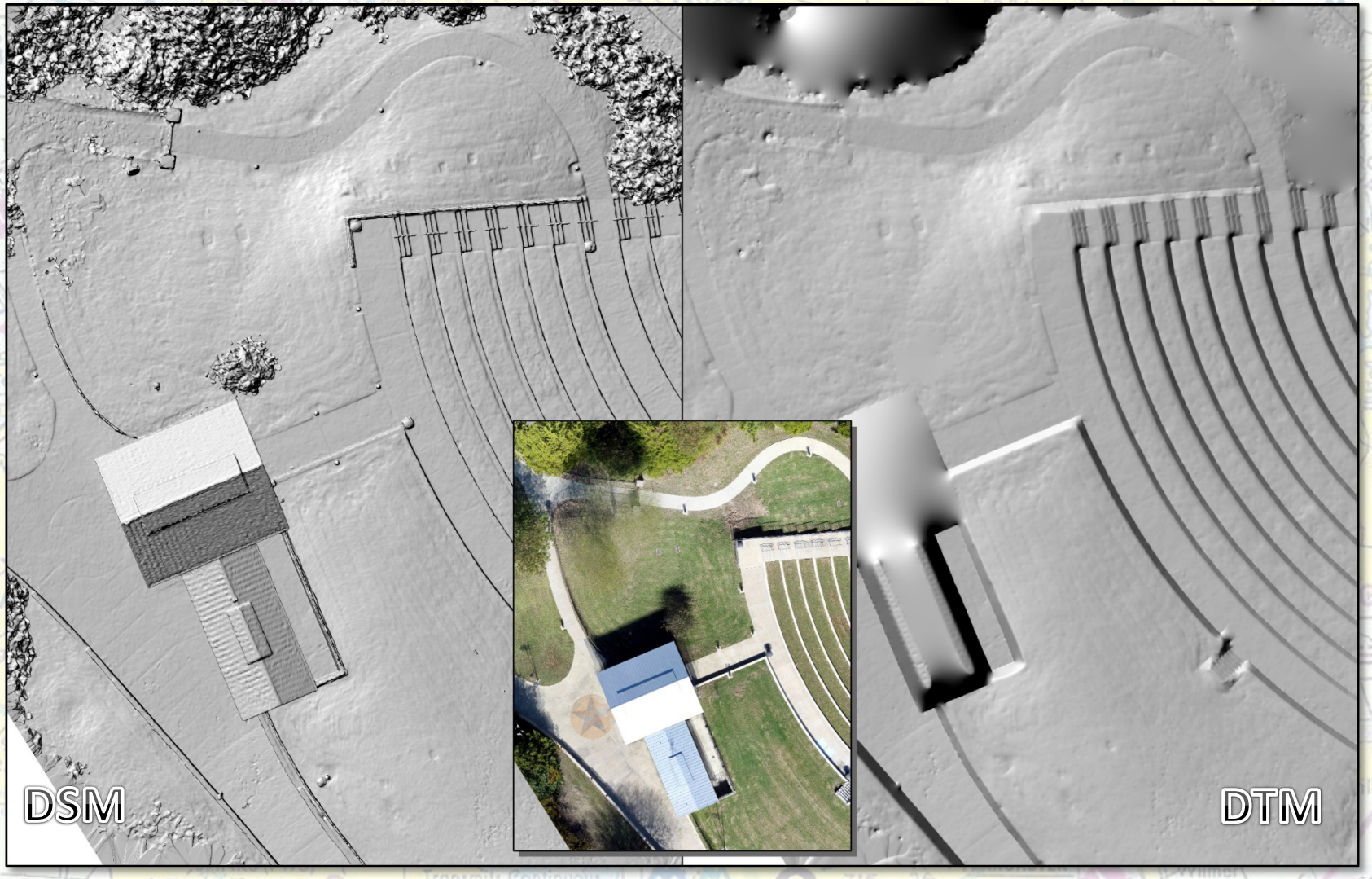


Processing with Drone2Map

- Used workstation with 6 core processor, 32 GB of RAM and Quadro video card.
- 2D data can be generated in a few hours
- 3D data will take several hours or even overnight depending level of detail

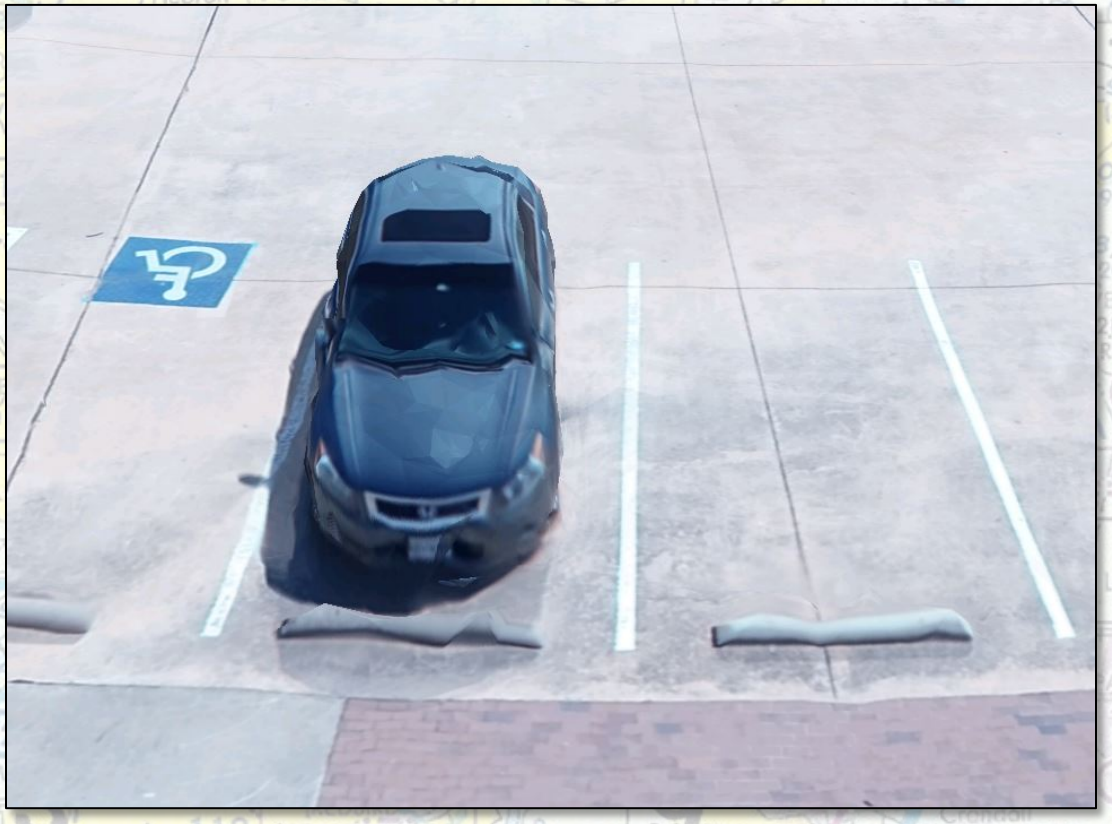


DSM and DTM

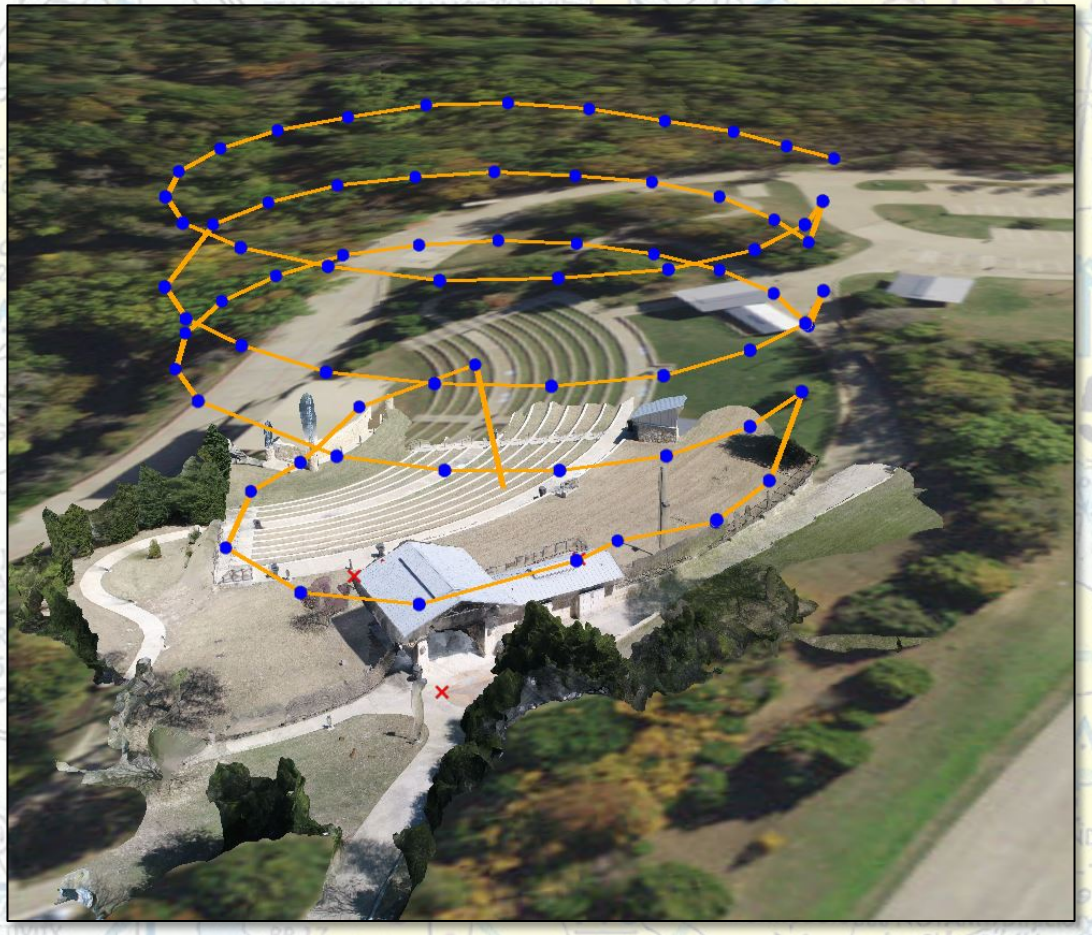


Orthomosaic

Initial 3D results



3D with Point of Interest Flight Plan



Questions?

Thank You

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