ReCap Photo

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Photogrammetry

Equipment

- 12MP or higher sensor resolution

- Use high quality prime rectilinear lens
  - Fisheye is not supported.

- EXIF information should have lens information.
  - For Aerial, GPS tags are essential for geo-location.

GPS information:	
GPSLatitudeRef	N
GPSLatitude	36 3 19.799999 (36.055500)
GPSLongitudeRef	W
GPSLongitude	94 13 45.0 (94.229167)
GPSAltitudeRef	Sea level
GPSAltitude	436.21 m

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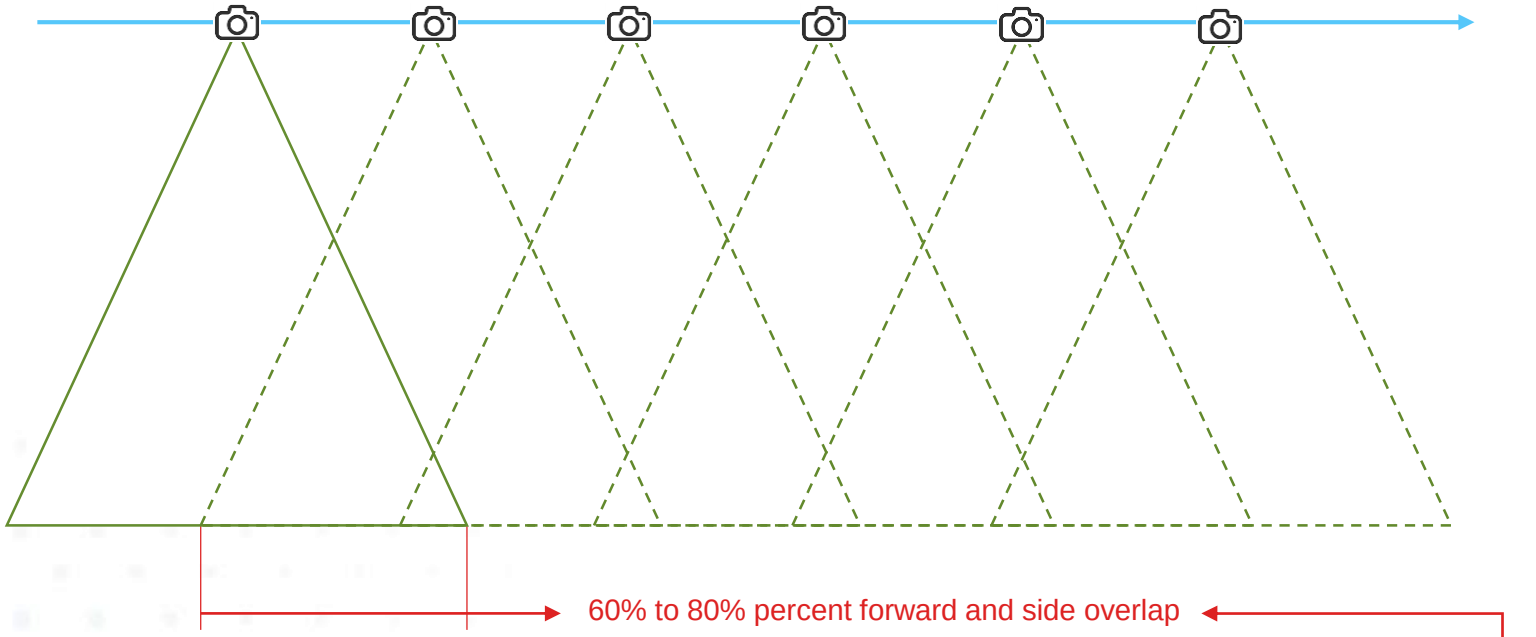
Photogrammetry

Image quality

- Forward and side overlap of 60 to 80% between the images.
- The object of interest should cover 60% or more in the image frame.
- Scene must be well lit (if possible, with uniform diffuse light). No harsh flashes.
- Set white balance to a fixed setting instead of Auto.
- Scene/object must be well textured (colour variation). Images of reflective, planar, repetitive structures/patterns, texture-less surfaces do not stitch well or will likely fail.
- The object should be in sharp focus and should not have motion or out-of-focus blur.
- ISO should be set to camera's base setting (typically 100 or 200 for most cameras).
- Post processing of JPG images is not recommended.
- If using a turn-table, make sure the back ground is completely texture less.

Aerial Photogrammetry



Front view

Top view

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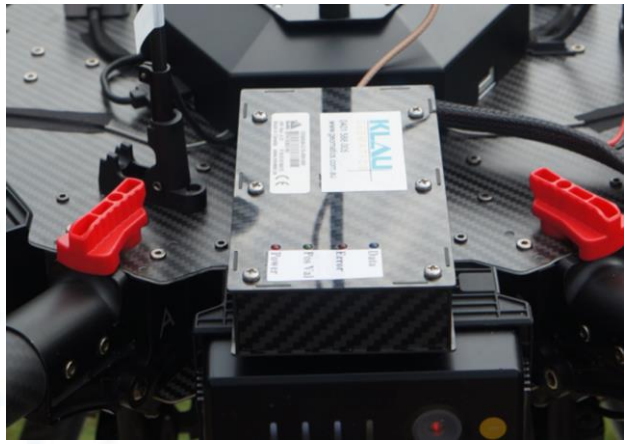
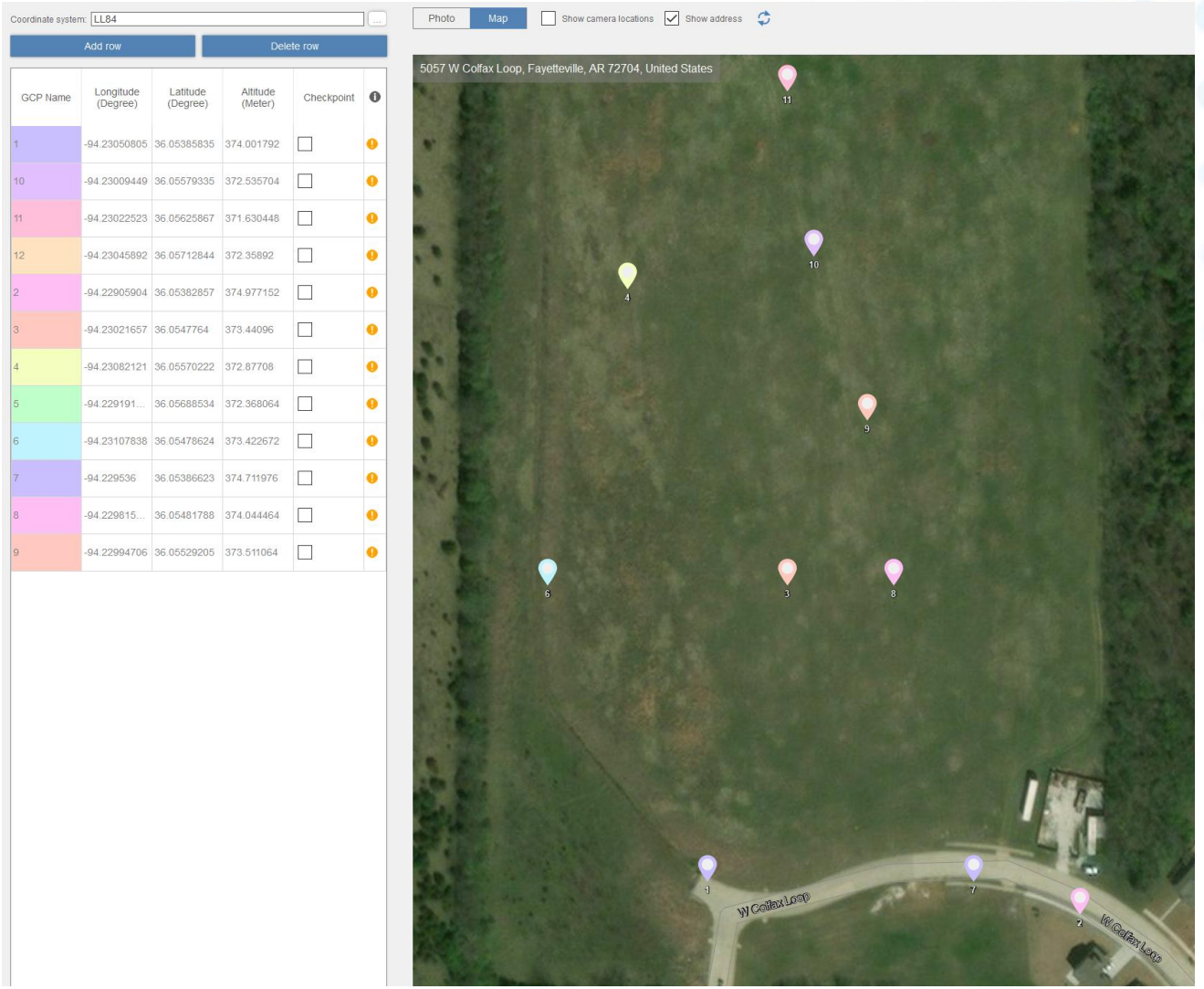
GCPs increases geo-location accuracy

Use Ground Control points for high accuracy

- At least 5 GCPs, spread across the scene and ~1/5th from the boundary
- Geolocation accuracy of the scene increases to within an inch irrespective of the site size
- RTK/PPK GPS increases absolute accuracy ***across*** the scene





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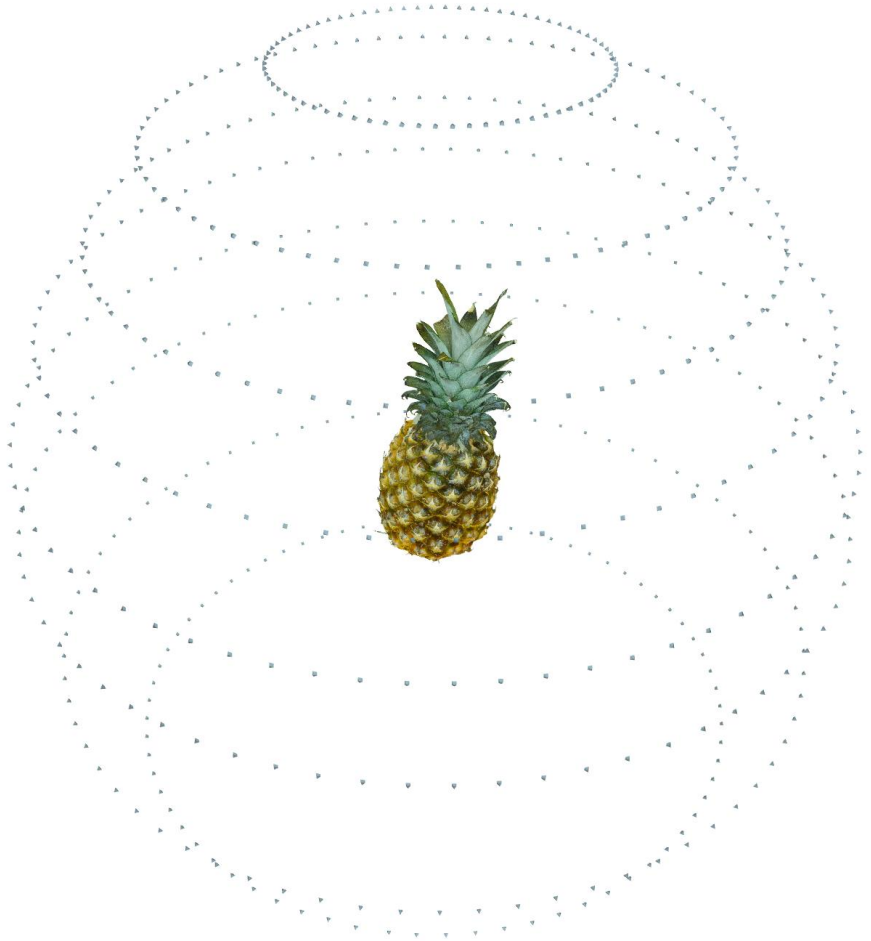
Close Range Photogrammetry

Freeform – Hand held or on Tripod

Automated – Turn table or 3D booths



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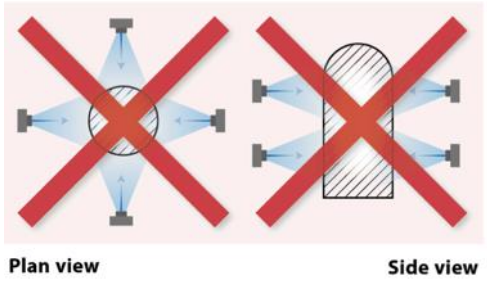
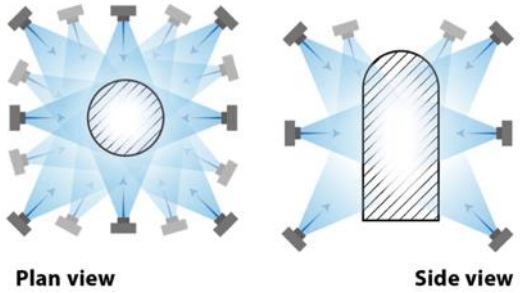
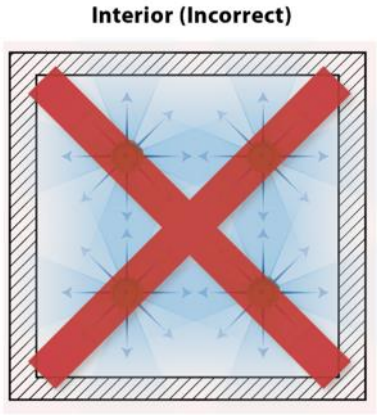
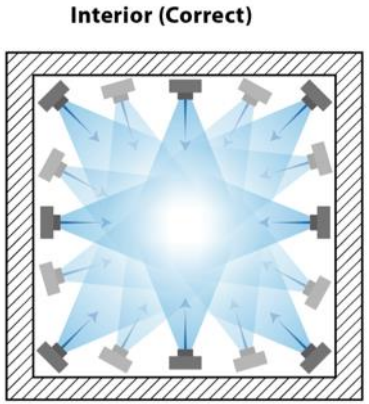
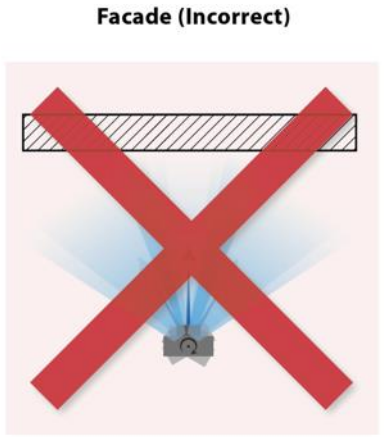
Close Range Photogrammetry

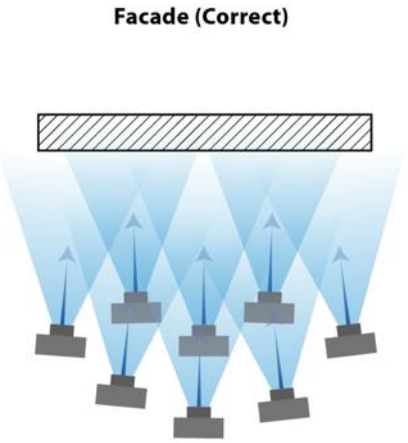












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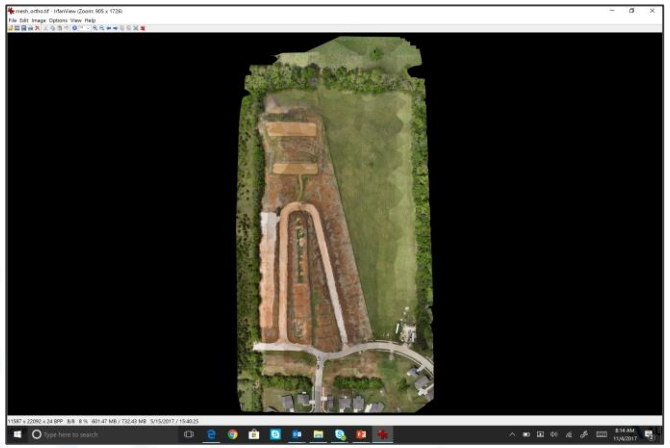
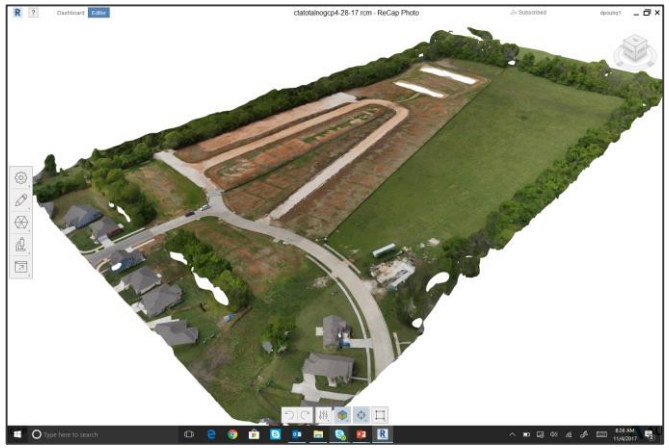
Results - Aerial

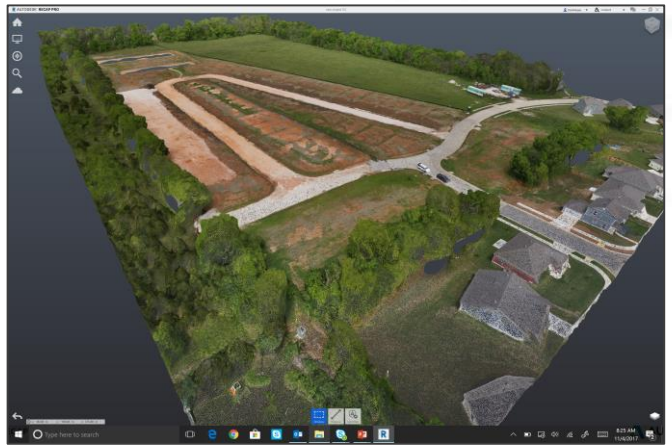
561 photos
40 acres



TIFF
615 MB
11,600 * 22,100 pixels



RCM
2,400 MB
20 million polygons



RCS
449 MB

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Results – Close-range

850 cameras

- 120 million polygons
- 20GB file size
- 120 x 8K texture tiles

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Make anything.