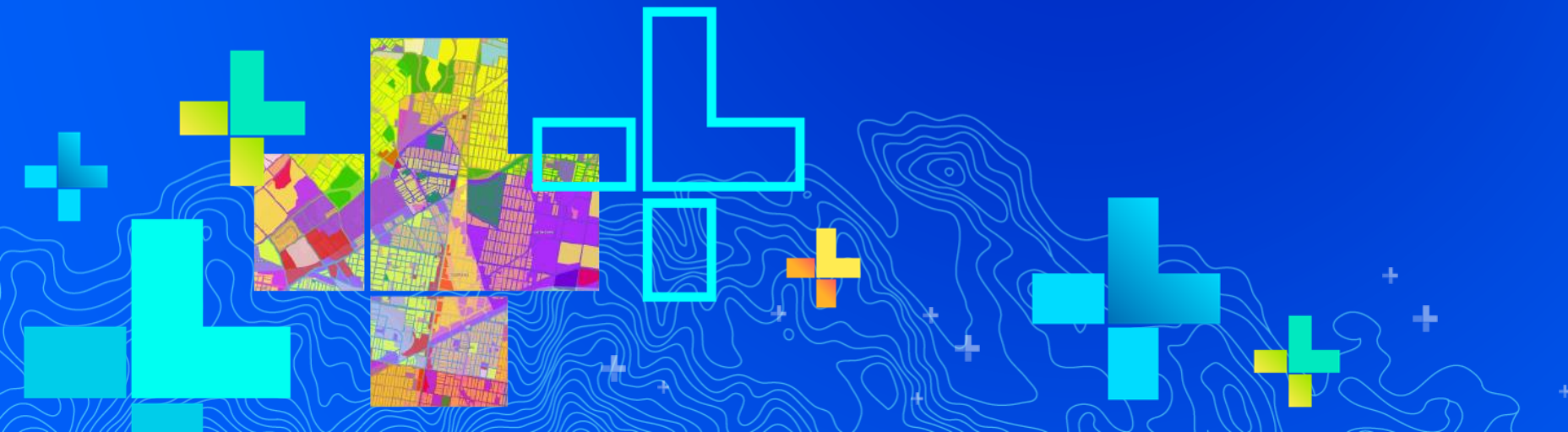


Create Orthoimage from Aerial and Satellite Imagery

Hong Xu



Outline

- ArcGIS Pro ortho mapping capabilities
- Demos
 - Drone images -- whole processing workflow
 - Digital aerial images -- create ortho mapping workspace
 - Satellite images – increase accuracy with reference image
- Q/A



ArcGIS Pro Ortho Mapping Capabilities

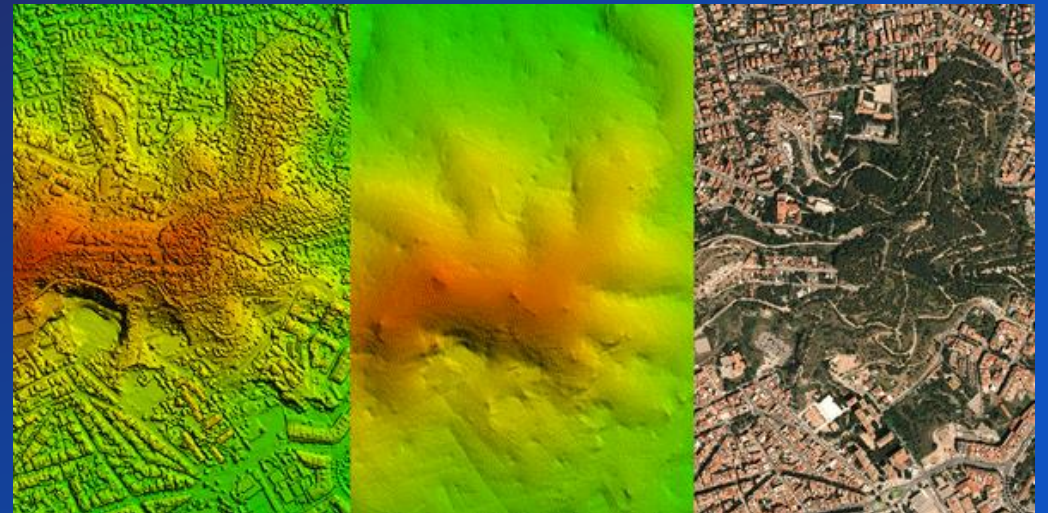
- Process

- Satellite images
- Drone images
- Digital aerial images
- Scanned aerial photographs



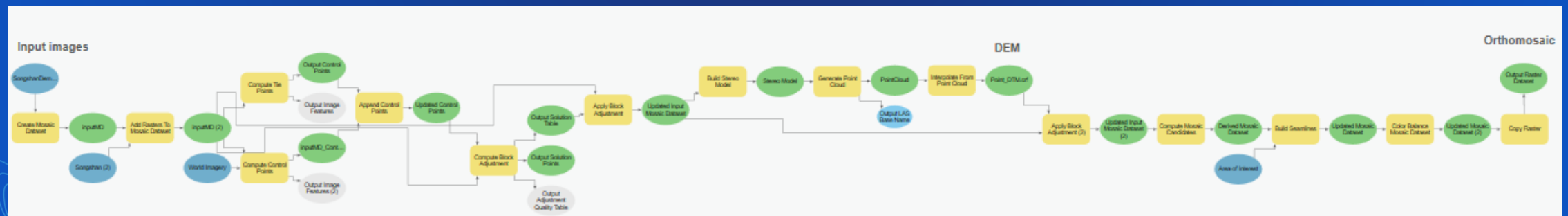
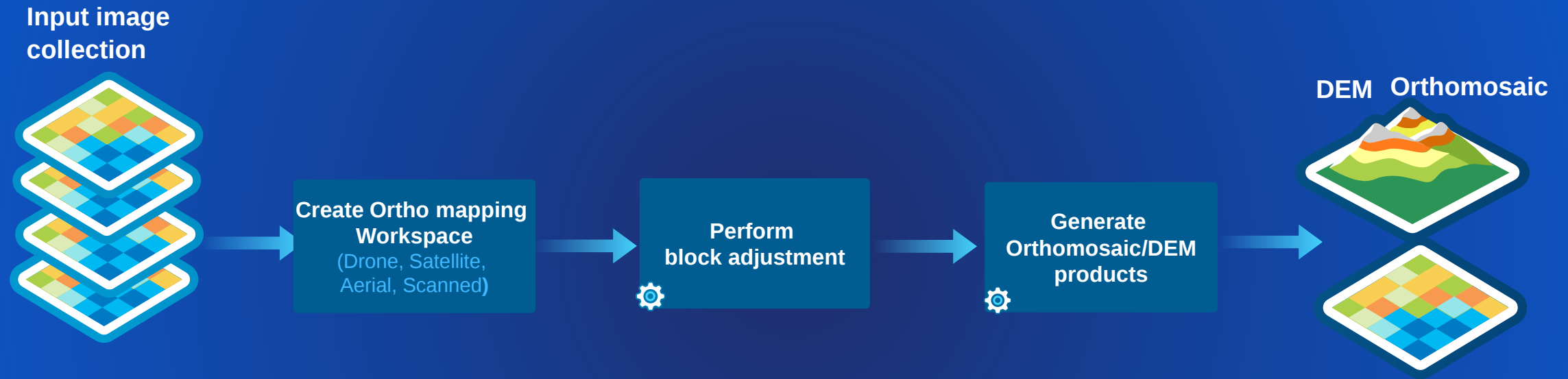
- Produce

- Digital Surface Model (DSM)
- Digital Terrain Model (DTM)
- Orthomosaics



ArcGIS Pro Ortho User Experience

Automatic and guided workflows



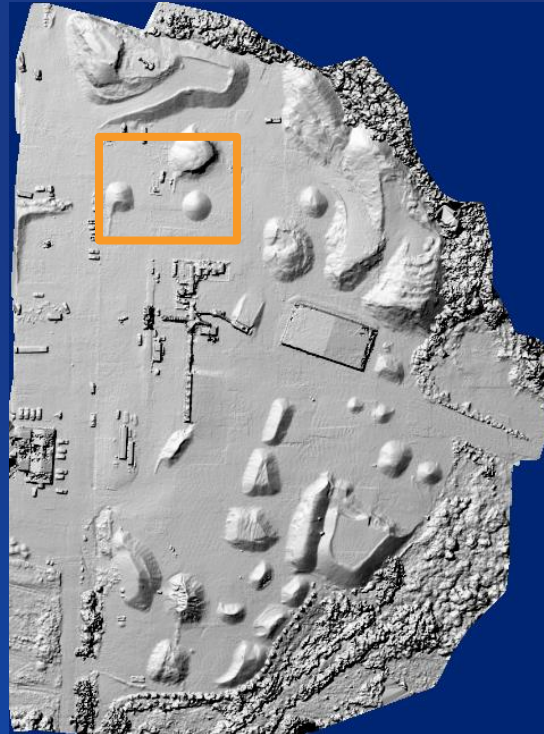


Process Drone images



Drone Workflow

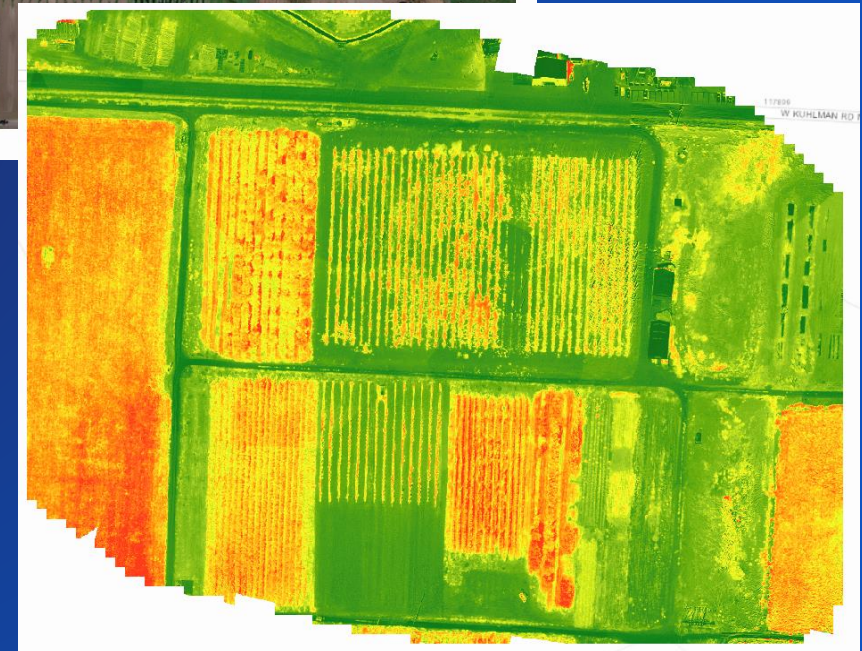
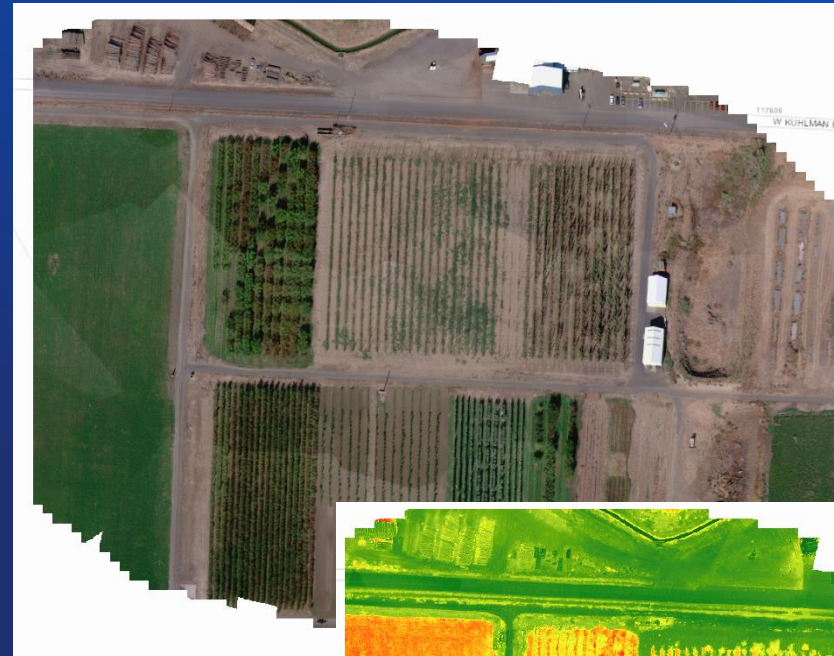
- 21 images out of 225 images
- create DSM and orthomosaic



Drone Workflow

Example: processing Altum dataset

- Adjust (tie point generation, band alignment, triangulation)
- produce surface reflectance and NDRE index map

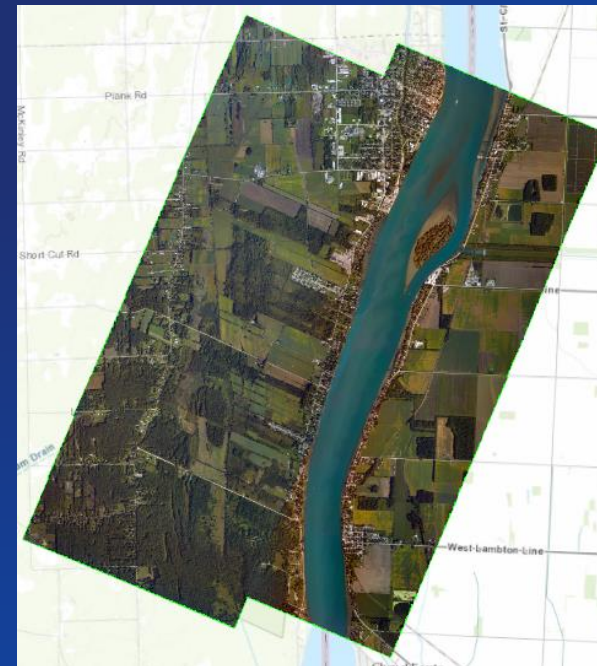


Process Aerial Imagery



Digital Aerial Image Workflow

- 22 images of Trimble Applanix
- Create workspace from EO table



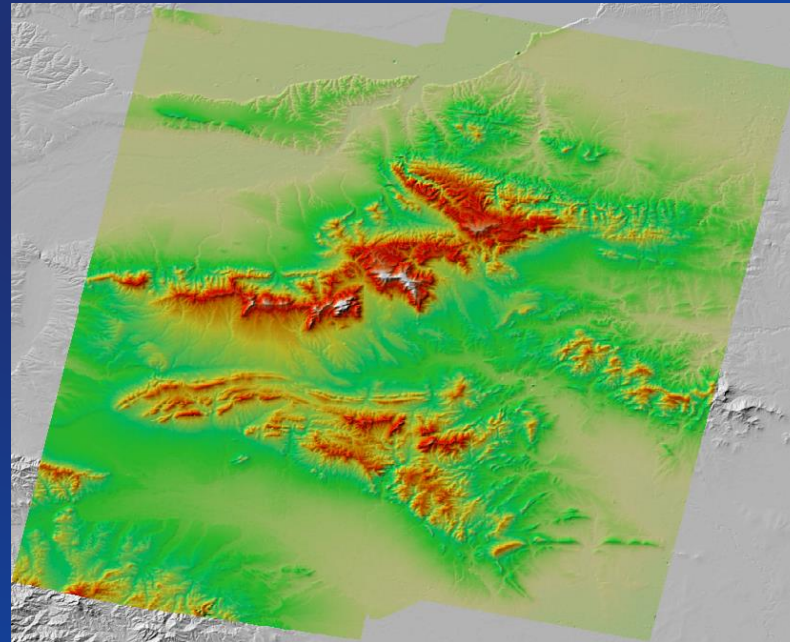
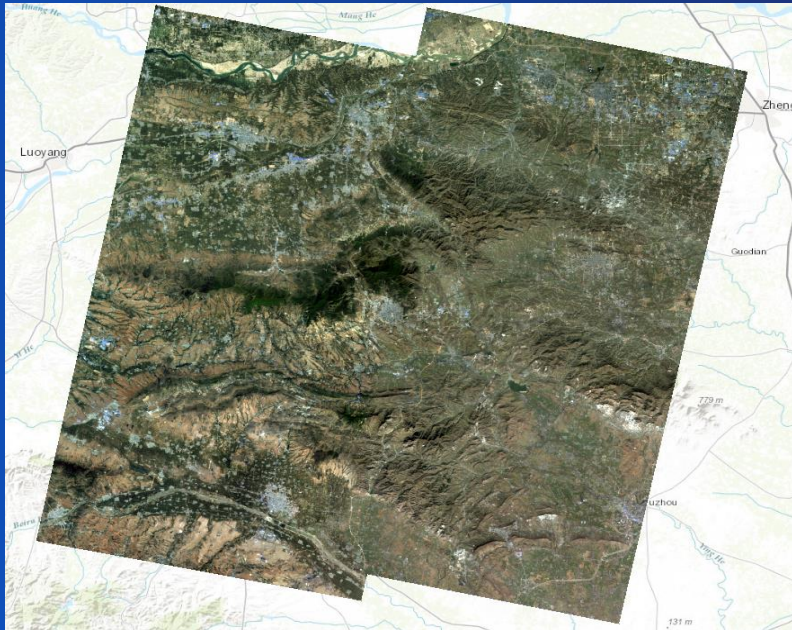


Process Satellite Data



Satellite Workflow

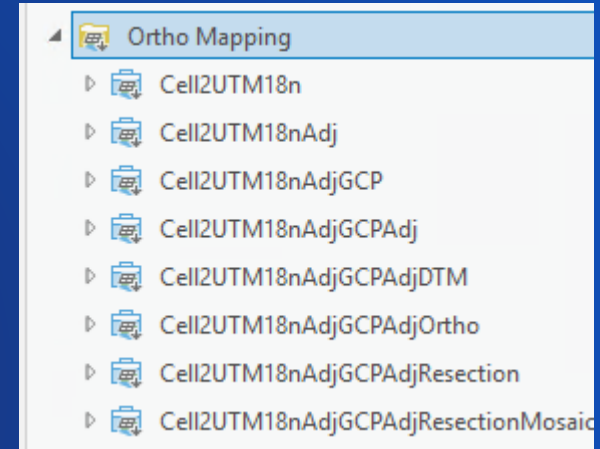
- Input
 - 4 ZY3 images
 - Georeferenced image chips
 - 90m SRTM data



Tips for Ortho Mapping Workspace

Create, Import, Add, Copy/Paste, Rename

- Copy/paste workspaces within Pro project
 - Use it to keep intermediate results, recommended!
- Create
 - From scratch
 - From existing mosaic dataset – satellite multiple sensors
 - From existing workspace – import only the adjustment mosaic
- Import
 - copy whole workspace to current project
- Add
 - Add reference to an existing workspace



More on Ortho Mapping Products

Ortho Mapping is part of ArcGIS Pro

- Ortho mosaic dataset
- Ortho photos
 - Export Mosaic Dataset Items tool
- Ortho tiles
 - Split Raster tool
- Map caches
 - Manage Tile Cache tool
- Index map using raster functions
- Measure Volume from DEM (2.4)

