



Optional Exercise

Load and View a Stereo NAIP Project

Introduction

The National Agricultural Aerial Imagery Program (NAIP) is currently the primary national aerial photo acquisition program. It acquires 0.5 to 1 meter imagery (leaf-on) of the lower 48 states over a 2-3 year period. Federal agencies have the option to purchase additional NAIP products from the vendors, such as NAIP elevation data and stereo imagery.

Stereo NAIP imagery covering several states has recently been acquired. It was collected with an ADS 100 pushbroom camera and requires a different workflow to load into Summit than for the frame-camera imagery you used in exercise 2.

Objectives

- Import a stereo NAIP project.
- Navigate in the stereo interface.

Required Data

- The Exercise 4 data folder.

Prerequisites

- **Summit Evolution installed on your computer.** You should have also reviewed Exercise 1, which introduces the Summit Evolution interface.
- **Course data saved to a local drive.**

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Part 1: Load a Stereo NAIP Project 2



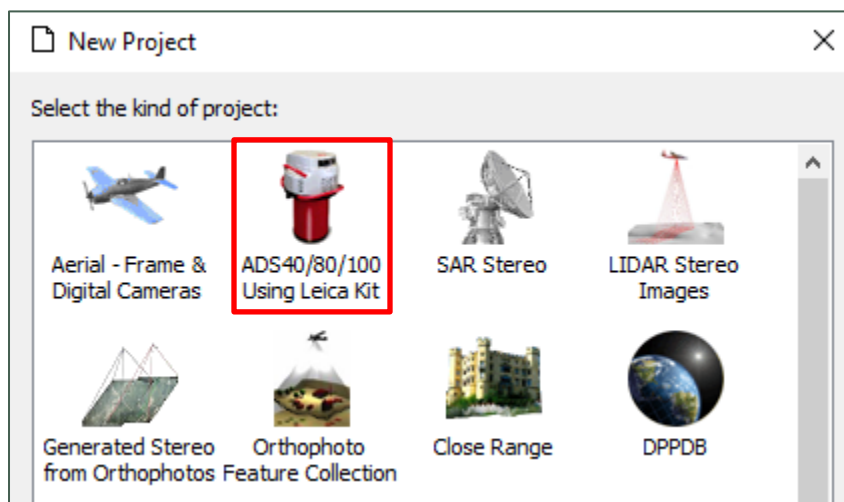
Part 1: Load a Stereo NAIP Project

A. Create a New “ADS40/80 Using Leica Kit” Project

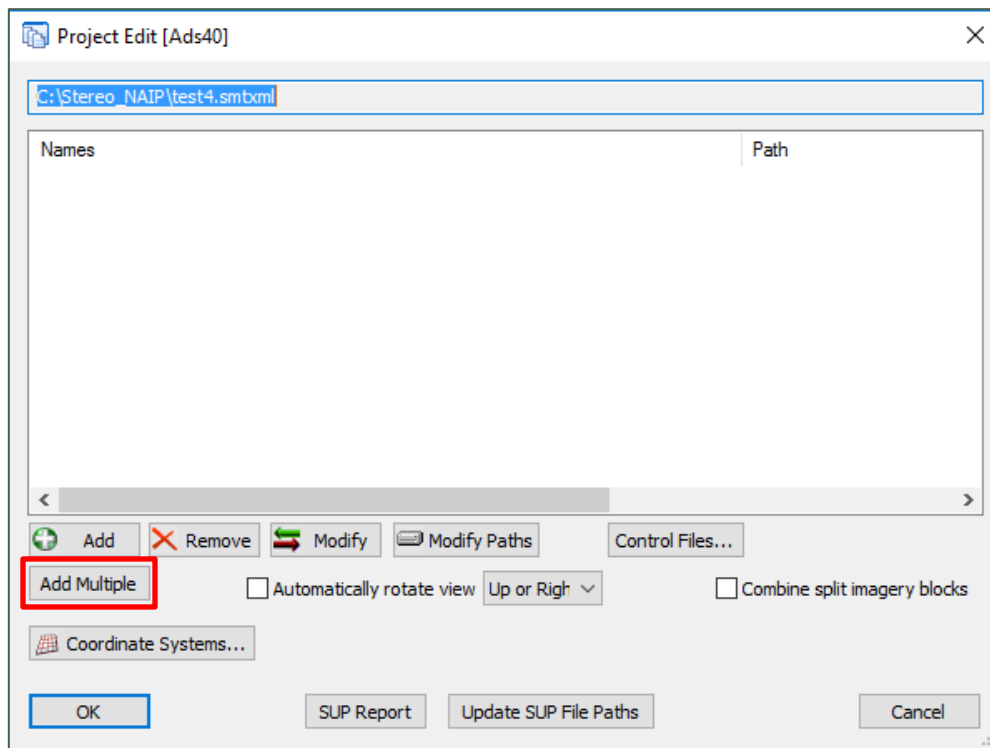
This section shows how to create a project file from images and support files that were made by the Leica Geosystems ADS100 Airborne Digital Sensor. This builds a project based on images and ADS100 .sup files.

1. Click **File** then **New Project**.
2. In the New Project window click the **ADS40/80/100 Using Leica Kit** button.

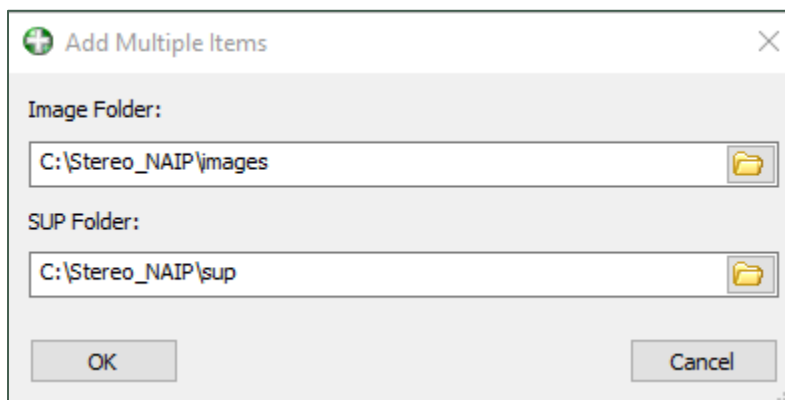
The Leica airborne digital sensor (ADS) is a line-scanning (pushbroom) sensor that collects images in long strips up to 20,000 pixels wide. The multispectral bands (blue, green, red, and NIR) are collected simultaneously to create four-band, co-registered, and equal resolution imagery from the data acquisition. ADS cameras are capable of recording imagery at multiple look angles (nadir, forward, and backward), which allows us to view the imagery in stereo.



3. Name and save your Summit Project file.
4. In the Project Edit window, click the **Add Multiple** button (see next page).

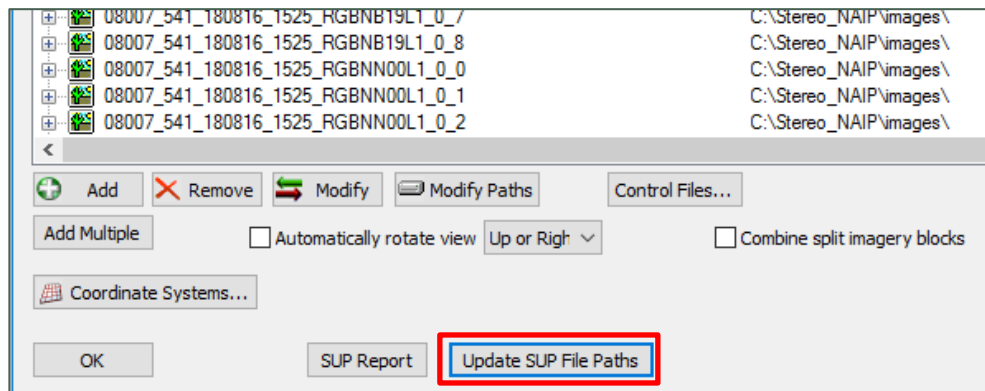


5. In the Add Multiple Items window, set the paths to the Image and SUP file folders located in the Stereo_NAIP folder then click **OK**.



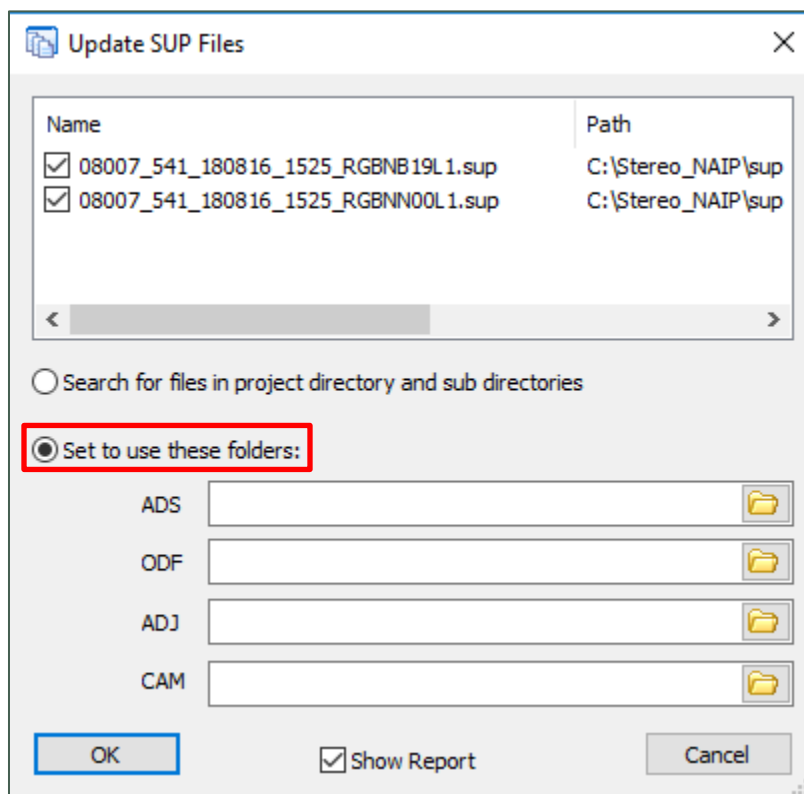
The ASCII information file (.sup) provides pointers to the multiple support files.

6. In the Project Edit window, click the **Update SUP File Paths** button.



7. In the Update SUP Files window click the button next to **Set to use these folders**.

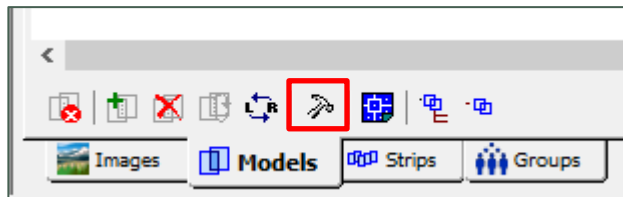
Update SUP Files Paths changes the paths within each .sup to the current location of the files. It does this only for the files that are needed by the SUMMIT EVOLUTION project. If images have been split up into multi-image blocks, only the .sup file for the end of each block will be modified. That is, if there are 160 images that make up eight split imagery blocks, only 16 of the 160 .sup files will be modified (eight for forward images, eight for nadir images, for example). It is normal to have some paths within each .sup file remain unmodified, because SUMMIT EVOLUTION does not use every file.



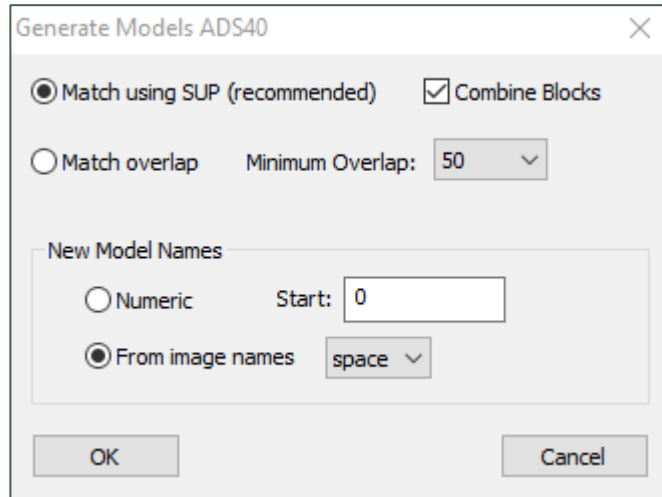
8. Set the paths for the following files:
 i. **ADS**: these files are located in the **images** folder.

The ADS image format is specific to the Leica airborne digital sensor (ADS), which is a digital line sensor. Each charge-coupled device (CCD) line array on the focal plane generates a continuous strip of imagery, which may be considered to be a single image for most processing operations. However, due to file-size limitations of some operating systems, and to allow efficient processing, the image data may be required to be stored in separate "blocks" on disk.

- ii. **ODF**: these files contain the position and orientation of each scan line in an ADS image. The data is interpolated from the real-time solution that is generated after the IPAS processing.
 - iii. **ADJ**: these files are located in the **odf** folder. They contain orientation data that is updated by triangulation.
 - iv. **CAM**: these files contain the geometric and radiometric calibration for a CCD line on the ADS sensor.
9. After you have set all of the file paths click **OK**.
 10. In the Project Edit window click the box for **Combine split imagery blocks** if you want the separate files to be displayed together as a long rectangle in the embedded bird's-eye view. This is a display setting, and does not change the image files on disk. All of the blocks from an image set and all the blocks in its matching stereo image must be added to the project in order for the combination to display correctly in stereo. If images are missing, they will appear black in that area of the bird's-eye view.
 11. Click **OK** to close the Project Edit window.
 12. In the **Project** window click the **Models** tab.
 - i. Click the **hammer** button to open the **Generate Models** window.

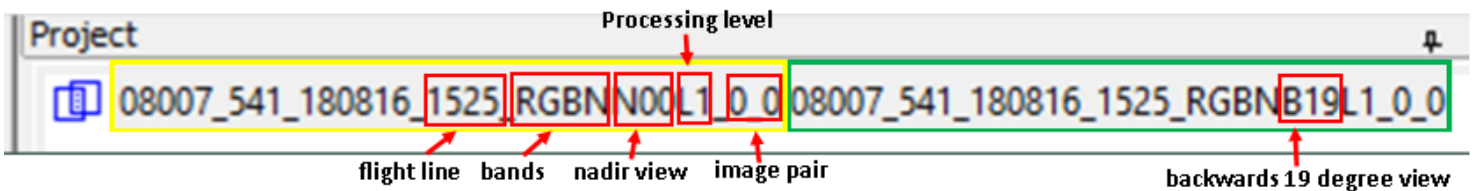


- ii. In the Generate Models window change the **Minimum Overlap** value to **50** and click the box to enable **Combine Blocks** (see next page).



iii. Click **OK**.

13. In the Project window click the model you just generated.



Below is a description of the 3 processing levels for ADS imagery

Product name	Description
Level 0	Georeferenced raw imagery
Level 1	Rectified imagery to a plane and rotated for stereo viewing
Level 2	Orthorectified imagery

14. The stereo model should be visible in the viewer. You can navigate around the image strip by clicking on locations in the overview image in the upper left corner of the viewer.

