



simactive
HIGH-END PHOTOGRAMMETRY SOFTWARE

HOW TO PROCESS SCANNED FILMS WITH CORRELATOR3D™

1 Overview

Scanned films are aerial photographs originally captured on analog films and later digitized through scanning. Processing scanned films in Correlator3D requires special handling due to variations in image dimensions, fiducial marks, and often the absence of embedded metadata. This guide provides a step-by-step workflow for handling scanned films, including project setup, camera configuration, fiducial measurement, aerial triangulation, and product generation.

GET IN TOUCH

www.simactive.com
contact@simactive.com



2 Project Setup

To begin processing scanned film imagery, a new project should be created.

1. Open Correlator3D and create a new project. Select “Medium / Large Format” as the project type.
2. Import the scanned films. The images should ideally be of the same dimensions and oriented consistently. Differences introduced during scanning such as rotation, cropped frames, or varying dimensions can impact accuracy.
3. Import the exterior orientation (EO) file in CSV, TXT, or ASCII format since scanned films typically do not contain EXIF metadata (Figure 1).

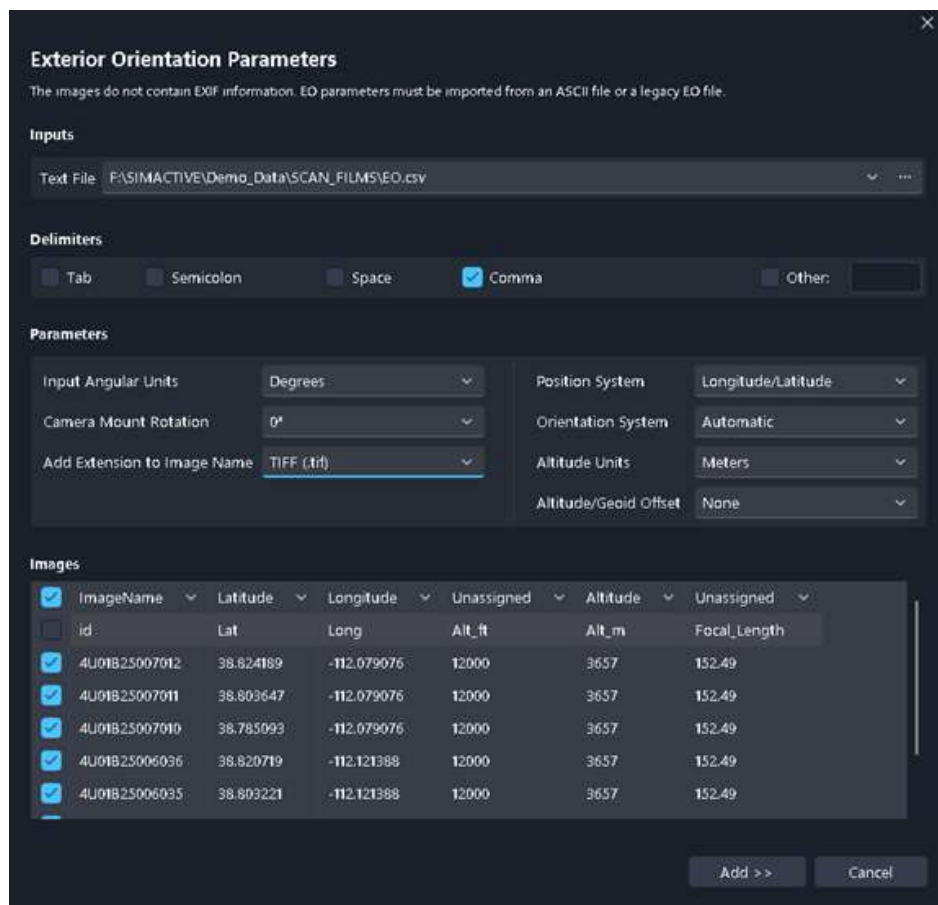


Figure 1: Exterior Orientation Parameters dialog for importing EO data.

4. Choose the appropriate projection system for your area of interest.
5. In the camera configuration dialog, set the camera type to “Scanned Films”. If the dimensions of images in pixels vary, then the smallest width and height values observed should be specified. Note that these minimum width and height values may come from two different images (Figure 2).

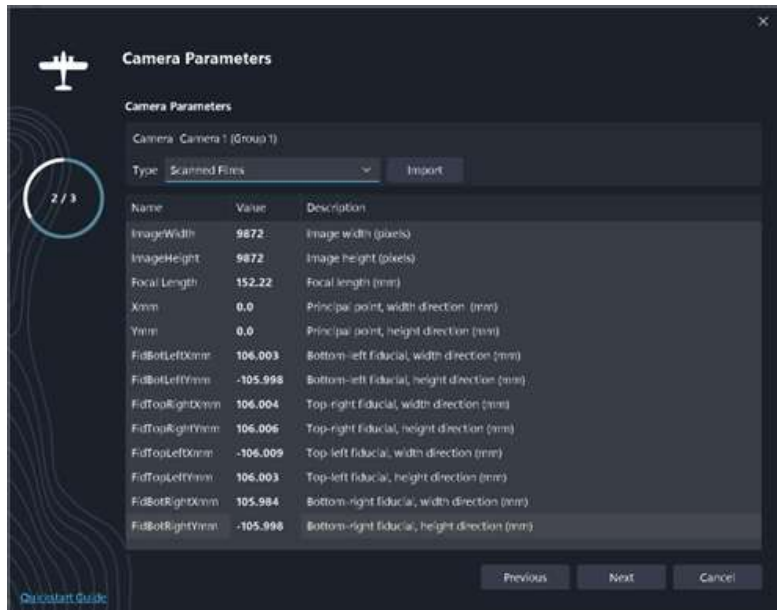
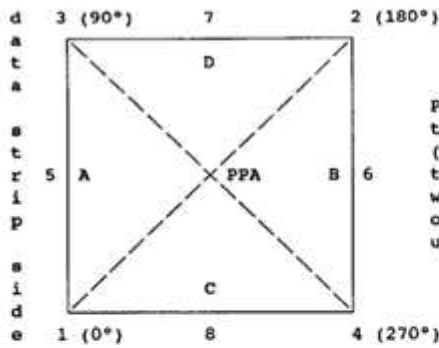


Figure 2: Camera parameters.

6. Enter the camera parameters such as the focal length (e.g., 152.22 mm), principal point (e.g. 0.0 mm), and fiducial coordinates in mm relative to the principal point. Use the camera calibration certificate to obtain accurate fiducial positions (Figure 3).

VII. Principal Points and Fiducial Coordinates



Positions of all points are referenced to the principal point of autocollimation (PPA) as origin. The diagram indicates the orientation of the reference points when the camera is viewed from the back, or a contact positive with the emulsion up. The data strip is to the left.

	X coordinate	Y coordinate
Indicated principal point, corner fiducials	0.008 mm	-0.003 mm
Indicated principal point, midside fiducials	0.011	0.001
Principal point of autocollimation (PPA)	0.0	0.0
Calibrated principal point (pt. of sym.) x_p, y_p	0.000	-0.003
Fiducial Marks		
1	-109.993 mm	-110.000
2	110.016	110.001
3	-109.992	109.992
4	110.012	-110.000
5	-111.999	0.000
6	112.014	0.001
7	0.011	111.985
8	0.011	-111.992

Figure 3: Fiducial coordinates from a calibration report.

3 Fiducial Measurement

Correlator3D automatically detects fiducial marks for scanned films when corner fiducials are present. These marks are used to establish the interior orientation of the camera. Fiducials typically consist of two perpendicular bright lines on a dark background.

For the first image, manually drag each fiducial under the green crosshair using the mouse or arrow keys. Place marks on all four fiducials: bottom-left, top-right, top-left, and bottom-right (Figure 4).

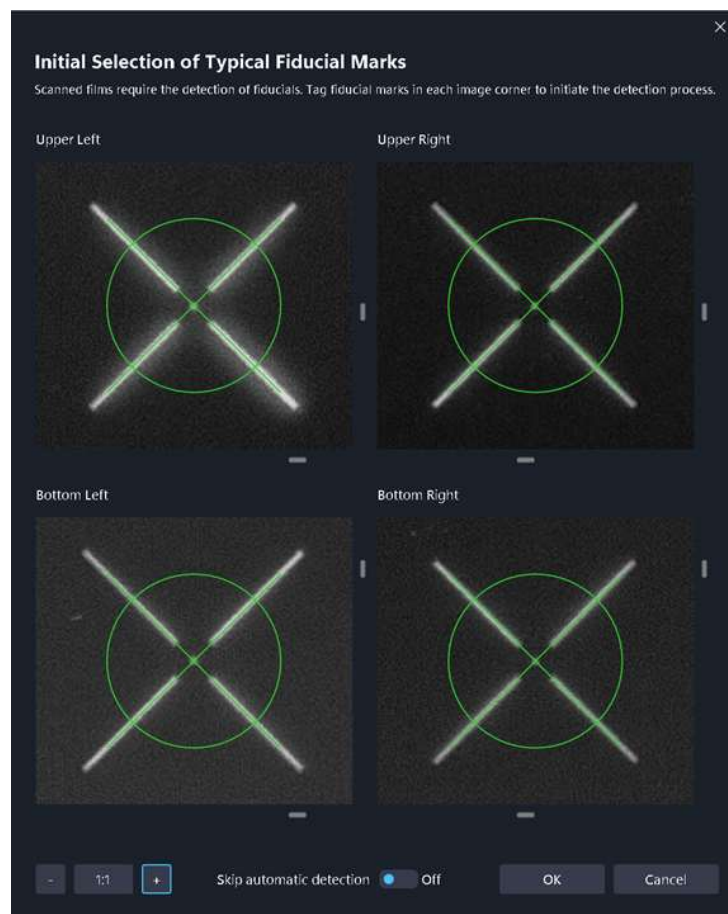


Figure 4: Manual fiducial tagging of the first image.

Once the first image is completed, click "OK" to start automatic detection on the remaining images. The software will validate results and prompt manual corrections if any fiducials are misplaced. Detection results can be verified in the log file (Figure 5). If automatic fiducial detection fails, it may be due to low scan resolution. Correlator3D offers the option to manually tag the fiducial on images where automatic detection failed.

Date/Time	Level	Message
10/21/2025 12:46:16 PM	Process	Starting fiducial detection.
10/21/2025 12:46:24 PM	Info	Fiducial detection of "F:\SIPACTIVE\Demo_Data\SCAN_FILMS\NEW_IMAGES\1VEQP00010135.tif" completed.
10/21/2025 12:46:24 PM	Info	Fiducial detection of "F:\SIPACTIVE\Demo_Data\SCAN_FILMS\NEW_IMAGES\1VEQP00010140.tif" completed.
10/21/2025 12:46:24 PM	Info	Fiducial detection of "F:\SIPACTIVE\Demo_Data\SCAN_FILMS\NEW_IMAGES\1VEQP00010141.tif" completed.
10/21/2025 12:46:25 PM	Info	Fiducial detection of "F:\SIPACTIVE\Demo_Data\SCAN_FILMS\NEW_IMAGES\1VEQP00010142.tif" completed.
10/21/2025 12:46:25 PM	Info	Fiducial detection of "F:\SIPACTIVE\Demo_Data\SCAN_FILMS\NEW_IMAGES\1VEQP00010143.tif" completed.
10/21/2025 12:46:25 PM	Info	Fiducial detection of "F:\SIPACTIVE\Demo_Data\SCAN_FILMS\NEW_IMAGES\1VEQP00010150.tif" completed.
10/21/2025 12:46:25 PM	Info	Fiducial detection of "F:\SIPACTIVE\Demo_Data\SCAN_FILMS\NEW_IMAGES\1VEQP00010151.tif" completed.
10/21/2025 12:46:25 PM	Info	Fiducial detection of "F:\SIPACTIVE\Demo_Data\SCAN_FILMS\NEW_IMAGES\1VEQP00010152.tif" completed.
10/21/2025 12:46:26 PM	Info	Fiducial detection of "F:\SIPACTIVE\Demo_Data\SCAN_FILMS\NEW_IMAGES\1VEQP00010153.tif" completed.
10/21/2025 12:46:26 PM	Process	Fiducial detection completed.

Figure 5: Other fiducial marks automatically detected.

4 Processing Workflow

Once the project has been created, the rest of the workflow remains the same as any other sensor type:

- Perform aerial triangulation. To ensure accurate georeferencing, ground control points (GCPs) can be defined using background satellite imagery or reference orthos
- Generate a DSM at 5–10 times the input GSD for optimal efficiency
- Derive a DTM from the DSM
- Orthorectify images using the DTM (for standard orthos)
- Create a mosaic from the orthophotos