

Documentation For

Using Image Library Tools

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Introduction

The “Image Library Tools” are a collection of MicroStation VBA macros created to assist in the creation and gathering of data from an ImageStation project. This information is used to build the Photogrammetry Unit’s TerraShare Image Library.

The macros are stored in a file named “ImageLibTools.mvba”. The file is located in unit’s standard location for MicroStation VBA macro (C:\NCDOT_V8_WORKSPACE\PHOTOGRAMMETRY_STDS\Standards\lva). Currently there are three macros contained in “ImageLibTools.mvba”. They are:

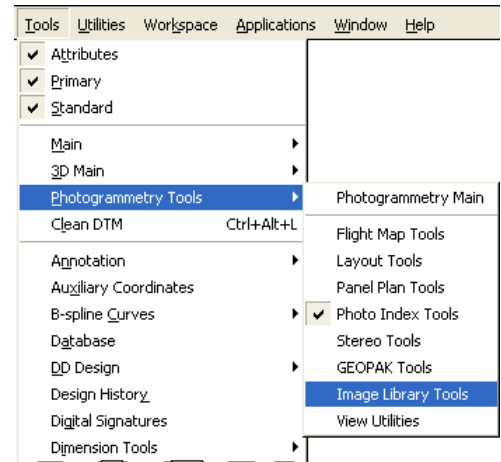
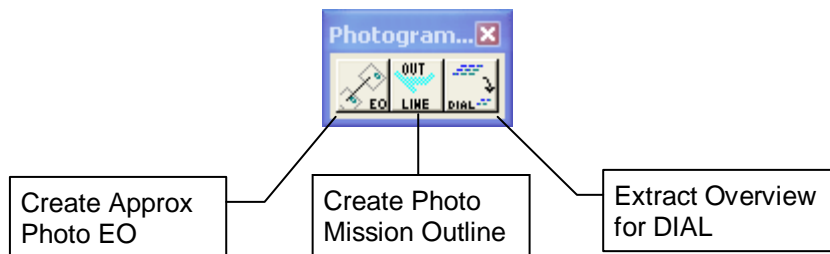
- Create Approx Photo EO** Generates an approximate exterior orientation for a strip of photos based on the scale, location, and rotation of two warped photos from the strip within a MicroStation design file. The Omega and Phi rotations are always zero. The Kappa rotation is determined by the photo center of the two warped photos.
- Create Photo Mission Outline** Combines and draws the photo footprints contained in an ImageStation project’s photo file in a MicroStation design file.
- Extract Overview for DIAL** Creates a new ImageStation project and photos by extracting the overview image (thumbnail image) from the each full resolution scanned photo that is closest to 224 microns in pixel size. The new ImageStation project contains new IO measurements scaled from the original project to match the image height and width of the created thumbnail image.

A toolbar (Photogrammetry_DIAL) has been created for easy access of the macros. This document contains instructions on accessing and using each of the contained macros.

Displaying the Toolbar (Photogrammetry_DIAL)

The Photogrammetry_DIAL toolbar can be opened from the MicroStation menu bar. To display the toolbar use the following menu path: **Tools → Photogrammetry Tools → Image Library Tools**.

The toolbar shown below will be displayed. When the cursor is over a toolbar button, a tool tip describing the button will be displayed if “Tool Tips” has been checked on the MicroStation help menu.



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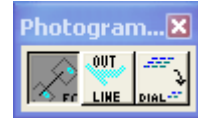
Create Approximate Photo EO (CreateApproxPhotoEO)

Prerequisites:

- ImageStation Project (ISPM Project) with interior orientation (IO) read for all photos
- Two images for each photo strip in ImageStation project loaded and georeferenced through MicroStation's Raster Manager (See Digital Image Archive Library SOP)

Steps for EO Creation:

- Activate the "Create Approx Photo EO" macro by clicking the toolbar button shown depressed to the right.



The screenshot shows the 'Create Approximate Photo EO' dialog box. It features two text input fields: 'ISPM Project File' and 'EO Output File', each with a browse button (three dots) to its right. Below these fields are three buttons: 'Change Paths', 'Process Photos', and 'Exit'. At the bottom is a table with columns for 'Photo', 'Strip', 'Image Path', 'Image Name', and 'Status'. A status bar is located at the very bottom of the dialog.

Photo	Strip	Image Path	Image Name	Status
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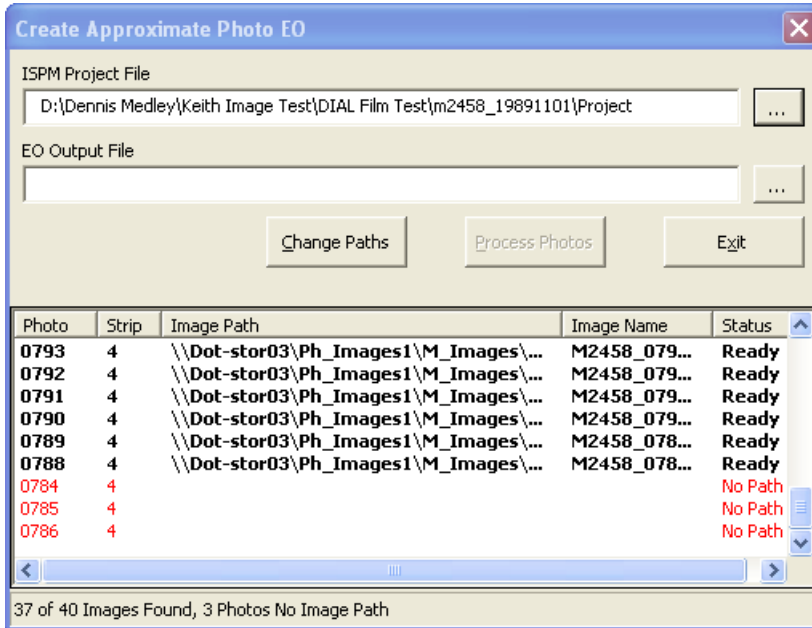
Callout labels on the right side of the dialog box:

- "ISPM Project" browse button
- "EO Output File" browse button
- "Exit" macro command button
- ISPM project photo list area
- Status Bar

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- Click the “ISPM Project File” browse button and locate and select the project file in the “Open Project File” dialog box.

The status bar will display summary information about the photos loaded. Photos that will not be processed appear in red. Other colors are used to represent a less serious status of the photo record that may not necessarily prevent the photo from being processed.



- Click the “EO Output File” browse button to define the file name and path of the EO file to be created.
- Review and compare image path used in Raster Manager with image path loaded from project. Click the “Change Paths” button if to change the ISPM project image path to match Raster Manager if necessary.

The example ISPM project used a UNC image path, but Raster Manager's image path was mapped through the K: drive. After the “Replace Image Path” dialog box is opened perform the following steps:

Select the image path to replace from the dropdown box

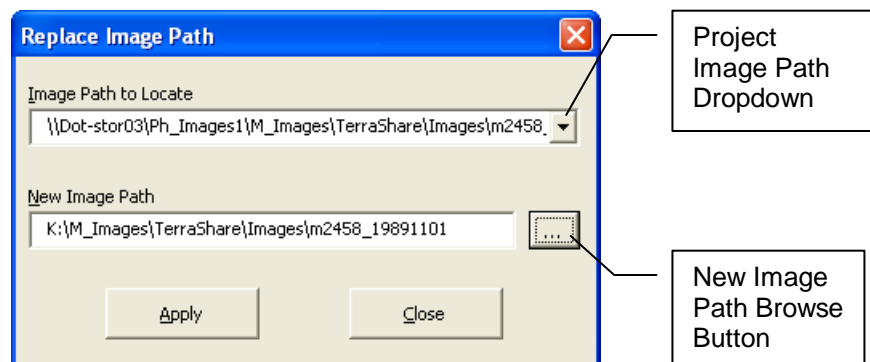
Click the “New Image Path” browse button to select the path used in Raster Manager

Click the “Apply” button to make the path change.

Note: Changing the image path does not change the original project, only what was loaded into the program’s memory.

Repeat previous steps if necessary.

Click Close when finished.

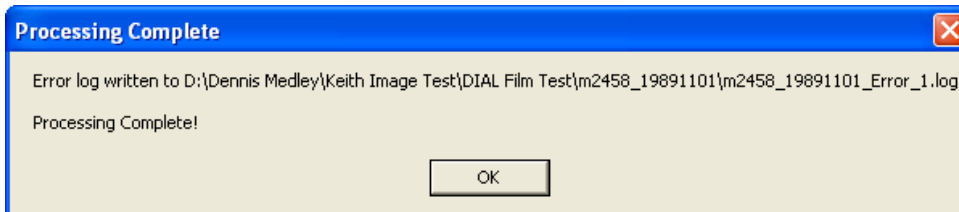
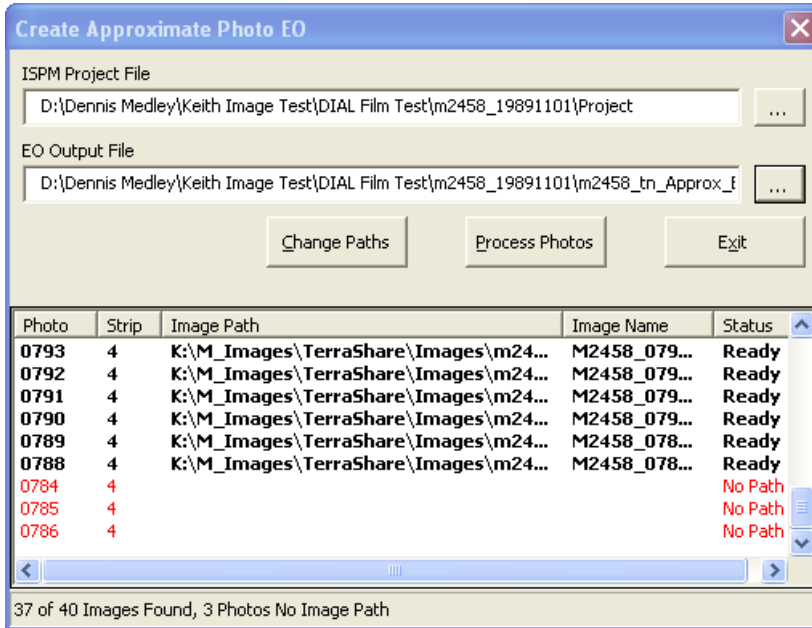


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- Click “Process Photos” to create the EO file.

When processing is complete, a message box will appear to indicate the program has finished and the name of any error log file that was created.

Note: The error log file may only contain warnings to make the user aware of less than ideal conditions during processing. The user should review the error log and EO file to decide if the EO file should be generated again after modifications are made to the ISPM project.



- Click the “Exit” command button to end the macro.

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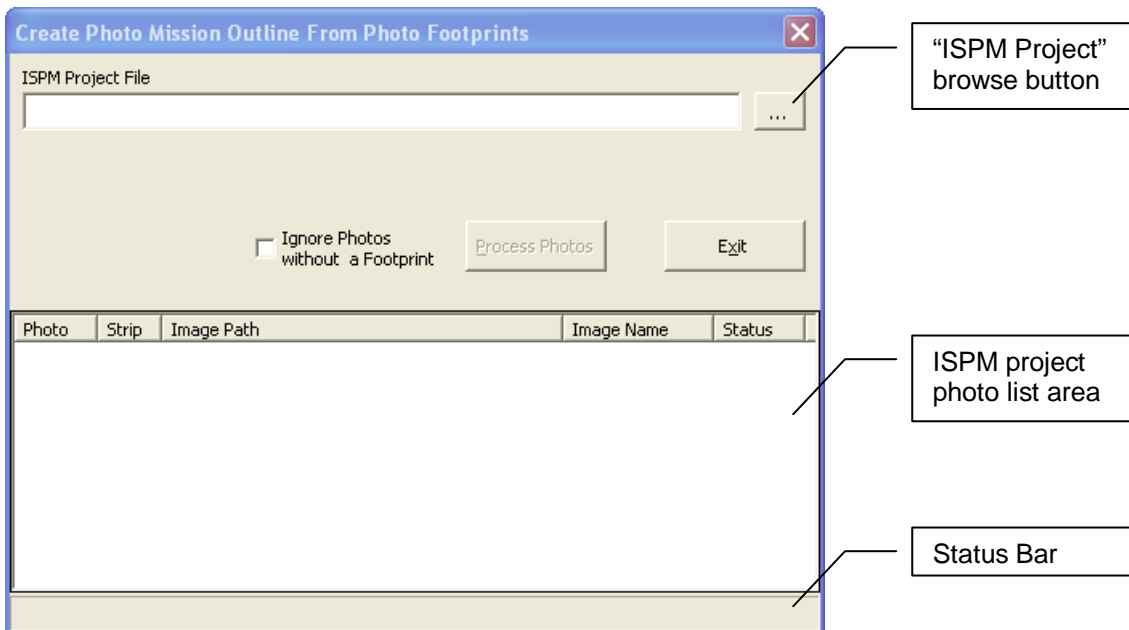
Create Photo Mission Outline from Photo Footprints (Create Photo Mission Outline)

Prerequisite:

- ImageStation Project (ISPM Project) with photo footprints defined in the project's photo file.

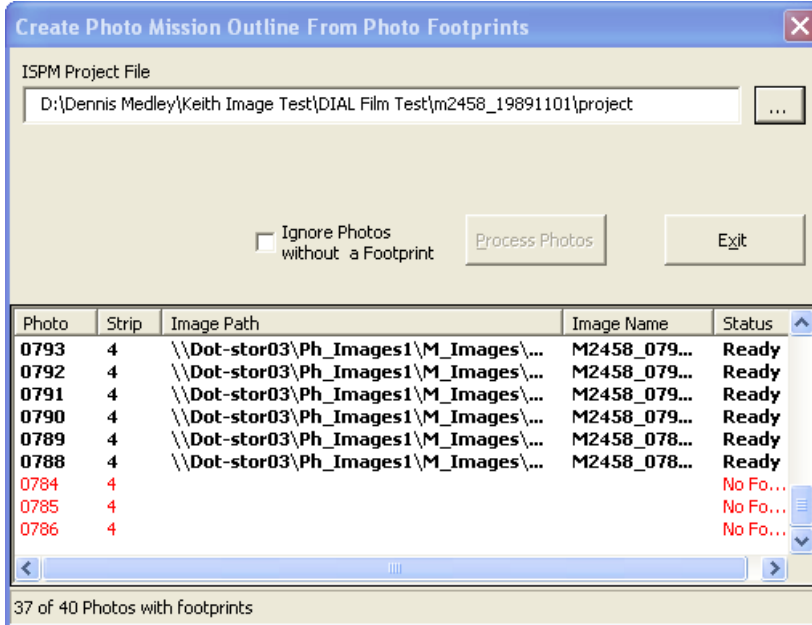
Steps for Photo Mission Outline Creation:

- Set MicroStation's active settings to define level and symbology of the photo mission outline.
- Activate the "Create Photo Mission Outline" macro by clicking the toolbar button shown depressed to the right.



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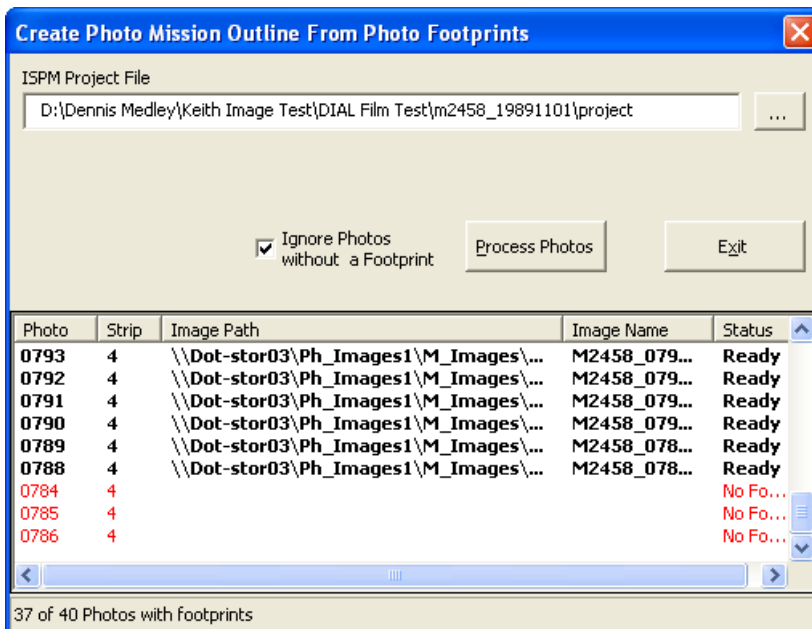
- Click the “ISPM Project File” browse button and locate and select the project file in the “Open Project File” dialog box.



The status bar will display summary information about the photos loaded. Photos that do not have a footprint appear in red in the photo list area.

Note: If any photo does not have a footprint, the “Process Photos” command button will not activate unless the “Ignore Photos without a Footprint” checkbox is checked.

- Check the “Ignore Photos without a Footprint” checkbox if necessary.



- Click the “Process Photos” command button to create the photo mission outline.
- Click the “Exit” command button to end the macro.

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Overview Extraction (Extract Overview for DIAL)

Prerequisite:

- ImageStation Project (ISPM Project) with interior orientation (IO) read for all photos and high resolution images with overviews.

Steps for Photo Mission Outline Creation:

- Activate the “Extract Overview for DIAL” macro by clicking the toolbar button shown depressed to the right.



“ISPM Project” browse button

“Image Output Directory” browse button

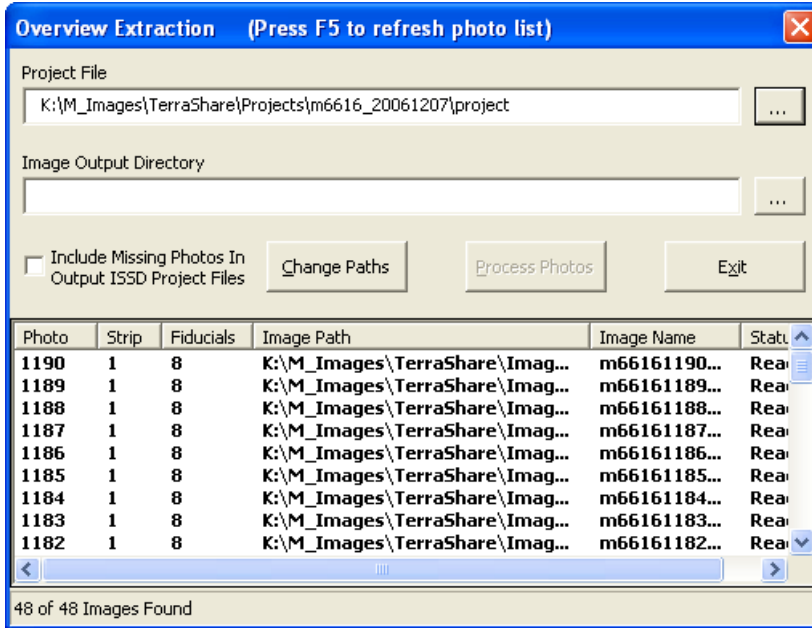
ISPM project photo list area

Status Bar

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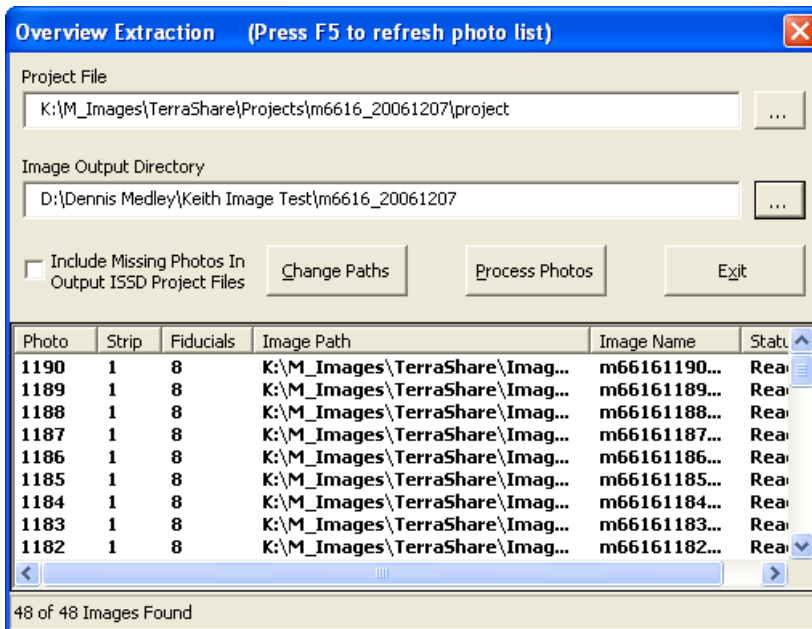
- Click the “ISPM Project File” browse button and locate and select the project file in the “Open Project File” dialog box.

The status bar will display summary information about the photos loaded. Photos with missing images will not be added to the new project unless the “Include Missing Photos In Output ISSD Project Files” checkbox has been checked.



- Click the “Image Output Directory” browse button to define the folder for the extracted overviews and the new ISPM project.

The “Image Output Directory” can not match the directory of any of the images in the original project.



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- Click the “Change Paths” command button to correct the image path for photos in the loaded project that have changed since the project was created.
- Check the “Include Missing Photos In Output ISSD Project Files” checkbox if photos with missing images are to be added to the new project.
- Click “Process Photos” command button to extract the overviews and create a new ISPM project.

Note: A new folder will be created inside the image output directory to hold the new ISPM project files.

- Click the “Exit” command button to end the macro.