# **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\vba). Currently there are three macros contained in "ImageLibTools.mvba". They are:

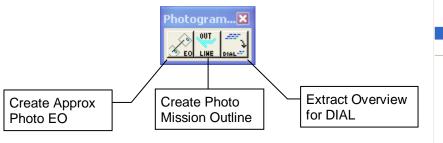
Create Approx Photo EO	Generates an approximate exterior orientation for a strip of photos based on the scale, location, and rotation of two warped photos from the strip within a MicroStation design file. The Omega and Phi rotations are always zero. The Kappa rotation is determined by the photo center 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.

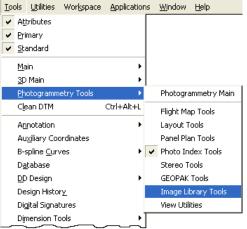
A toolbar (Photogrammetry\_DIAL) has been created for easy access of the macros. This document contains instructions on accessing and using each of the contained macros.

#### 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**  $\rightarrow$  **Photogrammetry Tools**  $\rightarrow$  **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.





# 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.



Create Approximate	e Photo EO			- "ISPM Project" browse button
EO Output File				- "EO Output File" browse button
	⊆hange Paths	Process Photos	E <u>x</u> it	- "Exit" macro command button
Photo Strip Imag	ge Path	Image Name	Status	
				ISPM project photo list area
				- Status Bar

 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.

Create	Approx	imate Photo EO		×
ISPM Pro	ject File			
D:\Der	nnis Medl	ey\Keith Image Test\DIAL Film Test\m2458_1989110	)1\Project	
EO Outp	ut File			
			otos	Exit
Photo	Strip	Image Path	Image Name	Status 🔥
0793	4	\\Dot-stor03\Ph_Images1\M_Images\	M2458_079	Ready
0792 0791	4 4	\\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\	M2458_079 M2458_079	Ready Ready
0790	4	\\Dot-stor03\Ph_Images1\M_Images\	M2458_079	Ready
0789	4	\\Dot-stor03\Ph_Images1\M_Images\	M2458_078	Ready
0788	4	\\Dot-stor03\Ph_Images1\M_Images\	M2458_078	Ready
0784	4			No Path 📥
0785	4			No Path 📃
0786	4			No Path 🥃
<		Ш		
37 of 40 I	mages Fo	ound, 3 Photos No Image Path		

- 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.	Replace Image Path	/	Project Image Path
Click Close when finished.	Image Path to Locate \\Dot-stor03\Ph_Images1\M_Images\TerraShare\Images\m2458.		Dropdown
	New Image Path           K:\M_Images\TerraShare\Images\m2458_19891101		
	<u>A</u> pply <u>C</u> lose		New Image Path Browse Button

• 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.

Create /	Approx	imate Phot	o EO			×
ISPM Pro	ject File					
	<i>.</i>	ev\Keith Imac	e Test\DIAL Film Test		11\Project	
1		-,,,	, ,		-,-,	
EO Outp	ut File					
D:\Der	nnis Medl	ey\Keith Imag	je Test\DIAL Film Test'	m2458_1989110	1\m2458_tn_Appr	o×_f
,			<u>C</u> hange Paths	Process Ph	otos	E <u>x</u> it
Photo	Strip	Image Path			Image Name	Status 🔼
0793 0792 0791 0790 0789 0788 0784 0785 0786 <	4 4 4 4 4 4 4 4 4 mages Fo	K:\M_Ima K:\M_Ima K:\M_Ima K:\M_Ima K:\M_Ima	ges\TerraShare\Ir ges\TerraShare\Ir ges\TerraShare\Ir ges\TerraShare\Ir ges\TerraShare\Ir ges\TerraShare\Ir www.www.www.www.www.www.www.www.www.ww	nages\m24 nages\m24 nages\m24 nages\m24	M2458_079 M2458_079 M2458_079 M2458_079 M2458_078 M2458_078	Ready Ready Ready Ready Ready No Path No Path No Path
Process	ing Cor	nplete				
Error lo		to D:\Dennis	Medley\Keith Image T	est\DIAL Film Te: OK	st\m2458_198911C	11\m2458_19891

• Click the "Exit" command button to end the macro.

ror\_1.log

# 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.



Create F		lission Outline From Photo Fo	otprints	×		"ISPM Project" browse button
		Ignore Photos without a Footprint	Process Photos	E <u>x</u> it		
Photo	Strip	Image Path	Image Name	Status		ISPM project photo list area
					<u> </u>	Status Bar

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

create	Photo A	Aission Outline From Photo Footprints		×
ISPM Pro	oject File			
D:\De	nnis Medl	ey\Keith Image Test\DIAL Film Test\m2458_1989110	)1\project	
		Ignore Photos without a Footprint	otos	E <u>x</u> it
Photo	Strip	Image Path	Image Name	Status 🔥
Photo 0793	Strip 4	\\Dot-stor03\Ph_Images1\M_Images\	Image Name M2458_079	Status A
0793 0792	4 4	\\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\	M2458_079 M2458_079	Ready Ready
0793 0792 0791	4 4 4	\\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\	M2458_079 M2458_079 M2458_079	Ready Ready Ready
0793 0792 0791 0790	4 4 4 4	\\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\	M2458_079 M2458_079 M2458_079 M2458_079	Ready Ready Ready Ready
0793 0792 0791 0790 0789	4 4 4 4 4	\\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\	M2458_079 M2458_079 M2458_079 M2458_079 M2458_079 M2458_078	Ready Ready Ready Ready Ready Ready
0793 0792 0791 0790 0789 0788	4 4 4 4 4 4 4	\\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\	M2458_079 M2458_079 M2458_079 M2458_079	Ready Ready Ready Ready Ready Ready
0793 0792 0791 0790 0789 0788 0788	4 4 4 4 4 4 4 4	\\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\	M2458_079 M2458_079 M2458_079 M2458_079 M2458_079 M2458_078	Ready Ready Ready Ready Ready Ready No Fo
0793 0792 0791 0790 0789 0788 0788 0784 0785	4 4 4 4 4 4 4 4	\\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\	M2458_079 M2458_079 M2458_079 M2458_079 M2458_079 M2458_078	Ready Ready Ready Ready Ready Ready No Fo
0793 0792 0791 0790 0789 0788 0788	4 4 4 4 4 4 4 4	\\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\	M2458_079 M2458_079 M2458_079 M2458_079 M2458_079 M2458_078	Ready Ready Ready Ready Ready Ready No Fo
0793 0792 0791 0790 0789 0788 0788 0784 0785	4 4 4 4 4 4 4 4	\\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\	M2458_079 M2458_079 M2458_079 M2458_079 M2458_079 M2458_078	Ready Ready Ready Ready Ready Ready No Fo

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.

Create I	Photo N	Aission Outline From Photo Footprints						
ISPM Pro	ject File							
D:\Dennis Medley\Keith Image Test\DIAL Film Test\m2458_19891101\project								
Ignore Photos     Exit								
Photo	Strip	Image Path	Image Name	Status 🔥				
0793	4	\\Dot-stor03\Ph_Images1\M_Images\	M2458_079	Ready				
0792	4	\\Dot-stor03\Ph_Images1\M_Images\	M2458_079	Ready				
0791 0790	4 4	\\Dot-stor03\Ph_Images1\M_Images\ \\Dot-stor03\Ph_Images1\M_Images\	M2458_079 M2458_079	Ready Ready				
0789	4	\\Dot-stor03\Ph_Images1\M_Images\	M2458_078	Ready				
0788	4	\\Dot-stor03\Ph_Images1\M_Images\	M2458 078	Ready				
0784	4			No Fo				
0785	4			No Fo 🗏				
0786	4			No Fo 🧹				
<								
37 of 40 P	hotos wil	th footprints						

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

## **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.

Photogram	nX
	niai a

Overvie Project F	w Extraction	(Press F5 to refre	esh photo list)			—	"ISPM Project" browse button
Image Ou	utput Directory						"Image Output Directory" browse button
	de Missing Photos I ut ISSD Project File	s <u>Change Pauls</u>	<u>P</u> rocess Photo	Image Name	jt Status	L	
							ISPM project
							photo list area
					/ /		

• 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.

Overviev	w Extra	action (	Press F5 to refresh photo list)					
Project Fi	e							
K:\M_I	nages\T	erraShare\P	rojects\m6616_20061207\project					
Image Output Directory								
		g Photos In roject Files	Change Paths Process Photo	s E <u>x</u>	it			
Photo	Strip	Fiducials	Image Path	Image Name	Stati 🔨			
1190	1	8	K:\M_Images\TerraShare\Imag	m66161190	Rea 📄			
1189 1188	1	8 8	K:\M_Images\TerraShare\Imag K:\M_Images\TerraShare\Imag	m66161189 m66161188	Rea Rea			
1187	1	8	K:\M Images\TerraShare\Imag	m66161187	Rea			
1186	î	8	K:\M_Images\TerraShare\Imag	m66161186	Rea			
1185	1	8	K:\M_Images\TerraShare\Imag	m66161185	Rea			
1184	1	8	K:\M_Images\TerraShare\Imag	m66161184	Rea			
1183	1	8	K:\M_Images\TerraShare\Imag	m66161183	Rea			
1182	1	8	K:\M_Images\TerraShare\Imag	m66161182	Rea 💙			
					>			
48 of 48 In	nages Fo	ound						

 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.

Overview	w Extra	action	Press F5 to refresh photo list)		
Project File					
K:\M_Images\TerraShare\Projects\m6616_20061207\project					
Image Output Directory					
D:\Dennis Medley\Keith Image Test\m6616_20061207					
□ Include Missing Photos In Output ISSD Project Files					
Photo	Strip	Fiducials	Image Path	Image Name	Stati 🔨
1190	1	8	K:\M_Images\TerraShare\Imag	m66161190	Rea
1189	1	8	K:\M Images\TerraShare\Imag	m66161189	Rea
1188	1	8	K:\M_Images\TerraShare\Imag	m66161188	Rea
1187	1	8	K:\M Images\TerraShare\Imag	m66161187	Rea
1186	1	8	K:\M_Images\TerraShare\Imag	m66161186	Rea
1185	1	8	K:\M Images\TerraShare\Imag	m66161185	Rea
1184	1	8	K:\M_Images\TerraShare\Imag	m66161184	Rea
1183	1	8	K:\M_Images\TerraShare\Imag	m66161183	Rea
1182	1	8	K:\M_Images\TerraShare\Imag	m66161182	Rea 🔽
<					>
48 of 48 Images Found					

- 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.