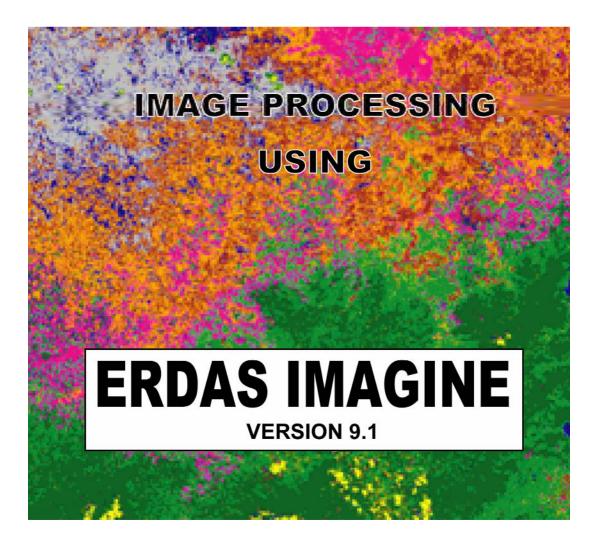
THE STUDY ON MAPPING POLICY AND TOPOGRAPHIC MAPPING FOR THE INTEGRATED NATIONAL DEVELOPMENT PLAN OF THE PHILIPPINES



EDITION 1

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1. Introduction

For GIS professionals, imagery is more than a set of pretty pictures. Imagery is a valuable source of data that captures current reality to portray actual events and places. Whether you are studying changes in sensitive environments, mapping resources or assessing damage from natural disasters, an imagery archive enables you to reference and measure the amount of change that has taken place in a geographic area. Accurate and up-to-date imagery leads to better decision making and quicker updates for your vector GIS while providing current and complete information. ERDAS IMAGINE®, from Leica Geosystems Geospatial Imaging, is the leading imagery software package used by your peers in the geographic imaging community. It was designed specifically for image processing, and its easy-to-learn, easyto-use and comprehensive collection of tools will help you create accurate base imagery that enhances your GIS. For over 80 years, geospatial information professionals have looked to Leica Geosystems for the best in geographic imaging solutions. The ERDAS IMAGINE toolbox spans the Geospatial Imaging Chain, enabling you to transform your imagery into information you can use.

Orthorectification, mosaicking, reprojection and image interpretation. If these processes sound intimidating, you may be accustomed to image processing tools that dictate lengthy and complicated workflows — not to mention output that does not integrate well with your GIS. ERDAS IMAGINE simplifies all of these image processing functions while maintaining the integrity of the geospatial data you need to update your GIS and your ESRI Geodatabase. The clean and intuitive ERDAS IMAGINE interface was designed to streamline your workflow and save you time. Powerful algorithms and data processing functions work behind the scenes so you can concentrate on your analyses. The fast display and ability to work with multiple datasets in geographically-linked viewers in the IMAGINE Geospatial Light TableTM (GLT) dramatically reduce the time you would otherwise spend trying to manually relate information from various sources.

For organizations with extensive collections of geospatial data, ERDAS IMAGINE supports enterprise-enabled geospatial image processing that uses a centralized relational database to store geospatial information. This provides enormous benefit to an institution by making its data visible and accessible to end-users; thereby the investment in image and feature geospatial information is maximized by making it exploitable to the greatest number of users. ERDAS IMAGINE leverages these capabilities by providing client-side interaction with spatially aware databases such as ESRI ArcSDE or Oracle Spatial 10g. Capabilities also extend to connected and disconnected topological editing of the database for efficient feature updates and maintenance.

2. Viewer

The ERDAS IMAGINE Viewer is the "main window" for displaying raster, vector, and/or annotation data. You can open as many Viewers as your window manager supports. If you are interested in photo interpretation, the <u>Geospatial Light Table</u> is an enhanced version of the Viewer designed specifically for this task. Many of the functions in ERDAS IMAGINE are available via the <u>Viewer</u> menu bar, across the top of the window, and the <u>Quick View</u> menu, which displays when you right-click in a Viewer window.

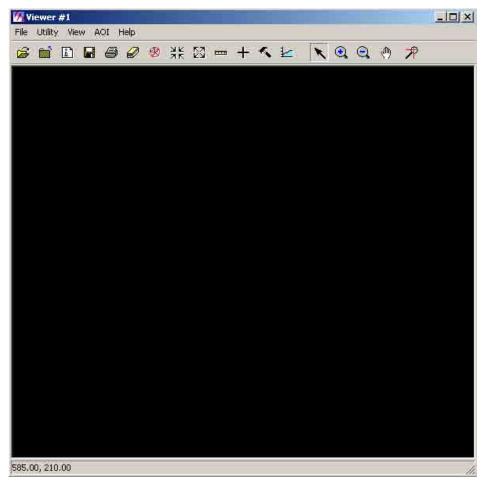
A Viewer window automatically opens when you start IMAGINE. To start another Viewer window, click this button on the IMAGINE icon panel:

2.1 Open "Erdas Imagine 9.1". A "Select Viewer Type" dialog box will appear. Click "Classic Viewer". Then click "OK".

Select V	/iewer Type	×
	Which type of viewer would you like to use?	
	Classic Viewer	
	C Geospatial Light Table	
	OK Cancel Help	
	🗖 Don't ask me this question again.	

2.2 The classic menu bar and a viewer window will appear.





Overview

An IMAGINE Overview Viewer opens automatically when the <u>Geospatial Light Table</u> (<u>GLT</u>) is selected as the viewer type. The Overview Viewer toolbar is similar to the <u>Classic Viewer</u>, but there are additional tools which link to Geospatial Tools. Use the Preference to turned off with option.



Click to open a raster layer. The File Selector dialog opens.



Click to close the top layer opened in the Viewer.

Click to display the <u>ImageInfo</u> dialog if the top layer in the Viewer is an .img file and the <u>VectorInfo</u> dialog if the top layer is a vector coverage.



Click to save the top layer in the Viewer.



Click to print the contents of the Viewer.

Click to clear the Viewer.

Click this icon to open the **Toggle Layer Tool Tree** dialog. This is an alternative to the Arrange Layers dialog. All the capabilities of the traditional Arrange Layers are provided, but there are new capabilities as well:

Any changes made in the Toggle Layer Tool Tree dialog are applied immediately, it is not necessary to click the **Apply** button first.

Allows you to put more layers in a small amount of space.

A preference can be used to embed the dialog within the GLT interface which prevents it from floating across your desktop.

Identifies a particular image from a group of images displayed into a single Viewer frame by highlighting the image currently under the cursor.

Click to use the selection tool. This is the tool used to select other tools and objects in non-raster layers (such as annotation or vector).

Click for zoom recenter, box zoom and real-time zoom features. For zoom recenter, left-click in the Viewer to indicate the center of the enlarged area. For Box zoom, left-hold and drag a box in the Viewer. For real-time zoom, middle-hold (or Ctrl-left-hold) and drag up and down in Viewer. See <u>Zooming</u>.

Click for zoom recenter, box zoom and real-time zoom features. For zoom recenter, left-click in the Viewer to indicate the center of the reduced area. For Box zoom, left-hold and drag a box in the Viewer. For real-time zoom, middle-hold (or Ctrl-left-hold) and drag up and down in Viewer. See <u>Zooming</u>.

Click to roam the image. Left-hold and drag the hand-shaped cursor over the image to pan up, down, left, and right. Middle-hold (or Ctrl-Left-hold) and drag to rotate the image in real-time.

Geospatial Light Table: An additional set of features is associated with the roaming tool when using the <u>Geospatial Light Table</u>. Click once in the active pane to toggle the

cursor. When the cursor is a 4-way arrow, moving the mouse in any direction begins panning across the image in that direction and the cursor changes to a pointer to indicate the direction in which the observer appears to be moving. The farther the mouse cursor is moved away from the original click point, the faster you pan. At anytime while panning, you can click again to return to the standard roam control as indicated by

the hand cursor 🖑

Click to reset rotation of the image. If you use the Zoom/Rotate thumbwheel control this option will allow you to reset the image.

Click to align the image up.

Click to align the image to true north.

Click to lock or unlock the rotation of the image in the viewer.

Click to zoom in by two from the center of the displayed portion of the image. See also <u>Animated Zoom</u>.

Click to zoom out by two from the center of the displayed portion of the image. See also <u>Animated Zoom</u>.

Click to fit the current image to the smallest viewer dimension. The aspect ratio of the data is always maintained, such that the longest dimension of the data is scaled to the corresponding Viewer window dimension. This is the same as the **Fit Image To Window** option found on the <u>Quick View</u> menu.

Click to measure points, lines, and areas in the displayed layer. The <u>Measurement</u> Tool opens.

Lick to start/update the inquire cursor. The <u>Inquire Cursor</u> dialog opens if it is not already open.



Click to start the Profile tools. The Select Profile Tool dialog opens.

This tool records a <u>snail trail</u>. To use the snail trail recorder, Viewer #1 must be populated with imagery. Then select an empty view pane and then click this icon.

This tool geographically links the current view pane to all unlinked view panes (and unlinked all linked panes) if possible. For example, with three view panes open, if Viewer #1 is the current view pane and it is linked to Viewer #3 and you click this icon, Viewer #1 is unlinked from Viewer #3 and linked to Viewer #2. In other words, view panes that are linked to the current view pane become unlinked, and those that are unlinked become linked. Clicking the tool again reverses the process. To change link box color, select **Utility > Selector Properties...** from the main Viewer menu.

Elick to enable the Toggle Footprint Layer. This option will show a footprint of every layer in the image which is defined with a bounding box around each layer.

Click to enable Toggle Footprint Titles. This option is available if the Toggle Footprint Layer is enabled, and it identifies each layer in the image. Use the <u>Footprint Properties</u> dialog to make changes to the size and color of the footprints.

Click to copy the contents of the GLT Viewer into the Overview Viewer. This may then be pasted into other applications using that applications paste command (for example, Edit | Paste or Ctrl-V for most Windows applications).

3. Importing data

When you use the many functions of ERDAS IMAGINE, image data allow changes to files which are in the native [.img format]

3.1 Open "Erdas Imagine 9.1". A "Select Viewer Type" dialog box will appear. Click "Classic Viewer". Then click "OK".

M Select V	/iewer Type			X
	Which type of	viewer would you lik	e to use?	
	، (Classic Viewer		
	r e	ãeospatial Light Tabl	e	
	OK	Cancel	Help	l.
	🗂 Don'ta:	sk me this question a	igain.	

3.2 Click "Import" icon.



3.3 An "Import/Export" dialog box will appear.

Туре:	GeoTIFF		1	*
Media:	File		<u> </u>	• *
nput File:		Output File: (*	img)	
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3.4 Click "Import" Import Click down arrow in the "Type" box and select the type format (e.g. TIFF).

	C Import C Export		
Type:	ADRG	•	*
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nput File: (*	.t[SPOT (CAP/SPIM) - SPOT (GeoSpot) SPOT (NASDA CAP)	1	
	SPOT CCRS SPOT DIMAP (Direct Read) SPOT Fast Format SPOT SICORP MetroView	=	
	SeaWiFS HDF Format SeaWiFS L1B and L2A (OrbView) Shapefile Sub-Image (Direct Read)		•
🔄 examp	⊣ Sun Raster le Surfer Grid (Direct Read) TARGA (Direct Read)		•
DK	TIFF (Direct Read)		lp.
40)	TIGER TM Landsat Acres Fast Format	*\\	·Ρ
<u> </u>	TM Landsat Acres Standard Format TM Landsat EOSAT Fast Format		-

3.5 Click "Input File" button.

Туре:	TARGA (Direct	Read)	*
Media:	File		*
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examp	les	iica	

3.6 An "Input File" dialog box will appear. Browse and locate folder of the file (e.g. imagery.tif) to be imported. Select the input file. Then click "OK".

Input File:		×
File Mu	ltiple	
Look in: 🔄	i scene01 💽 🗂 🖄 👻	Ì
5304320	10505190219282JM.tif if	OK Cancel Help
		Recent Goto
File name: Files of type: truecolor : 42	imagery.tif TIFF 💌 💌 243 Rows x 4243 Columns x 4 Band(s)	

3.7 Click "Output File" button.

Type:	THEF		*
Media:	File		*
nput File:		Output File: (*.img)	
magery.tif			
a 530432 imagery	200505190219282JM.tif v.tif	 228multi.img 519multi.img 5341.img 5342.img 	
		imagery.img	

3.8 An "Output File" dialog box will appear. . Browse and locate the folder where the output image is to be saved. Type the output filename (e.g. imagery.img) in the "File name" box. Then click "OK".

Dutput File:	×
File	
Look in: 🔄 image 💽 🔁 🖄 🛞	
CD5 CD6 ERDAS IMAGINE reviewCD indonesia-ALOS philippine	OK Cancel Help
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File name: Timagery.img Files of type: TMAGINE Image (*.img) * * 6 Files, 6 Subdirectories, 0 Matches, 154913620k Bytes Free	

3.9 Click "OK" in the "Import/Export" dialog box.

Type: TM Landsat	EOSAT Fast Format
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put File: (*)	Output File: (*.img)
nagery.tif	imagery.img
530432005051902193 icon.jpg imagery.aux imagery.tif metadata.dim	282JM

3.10 An "Import TIFF" dialog box will appear. Click "Import Options"

Input File:	d:/image/pl	hilippine/spot-geot	if/2005051	9multi/scene01	/imagery.tif
Output File;	d:/image/in	nagery.img			
No. of Rows:	4243	No. of Cols:	4243	No. of Ba	ands: 4
ОK	Pr	eview Options	Ĩ	Preview	Help
Close	fr	nport Options	-1		Batch

3.11 An "Import Options" dialog box will appear. Check parameters settings. If no changes, click "OK". Again click "OK" in the "Import TIFF" dialog box.

🧖 Import Options			×
Output Data Compre	ssion: None	\$	
Output Data Type:	Unsigned 8-bit	Block Size:	64
Select Layers:	:4	No. of Input Layers	. 4
c Create Pyramid Lay	r enter ranges using	parated list(i.e. 1,3,5) a "." (i.e. 2:5) Ignore Zero in Output Stats Subset Definition:	Г
Coordinate Type:	ULX 0.00	LBX: 4242.0	00 -
© File			
C Map	ULY: 0.00	12421	00
OK	Cancel	From Inquire Box	Help

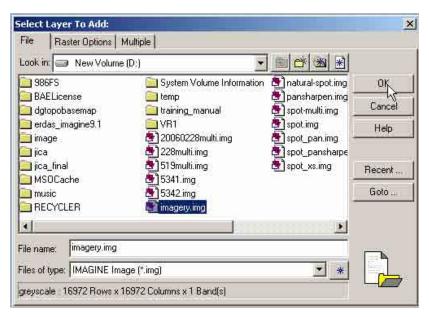
3.12 The system will process the data. Click "OK" when done

77 Importing	TIFF Data	×
Job State: Percent Done:	Loading raster data 29% 0	
	DK Cancel Help	

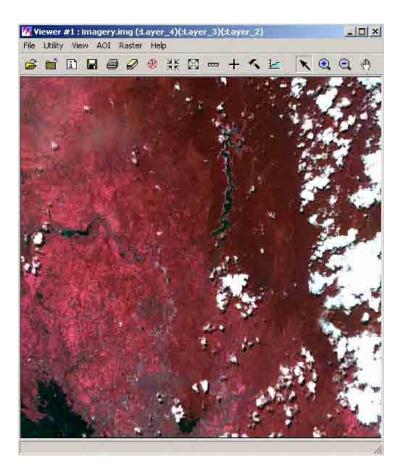
3.13 Click "Open Layer" icon in the "Viewer" window.



3.14 A "Select Layer to Add" dialog box will appear. Browse and locate folder of the imported output file (e.g. imagery.img). Then click "OK".



3.15 The image (e.g. imagery.img) will be shown in viewer window.



4. Mosaicking

Mosaicking is the process of joining georeferenced images together to form a larger image or a set of images. The input images must all contain map and projection information, although they need not be in the same projection or have the same cell sizes. Calibrated input images are also supported. All input images must have the same number of layers.

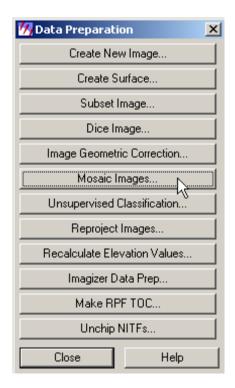
4.1 Open "Erdas Imagine 9.1". A "Select Viewer Type" dialog box will appear. Click "Classic Viewer". Then click "OK".

Select	Viewer Type			×
	Which type of	viewer would you like	to use?	
	@ C	lassic Viewer		
	r G	ieospatial Light Table		
	OK	Cancel	Help	
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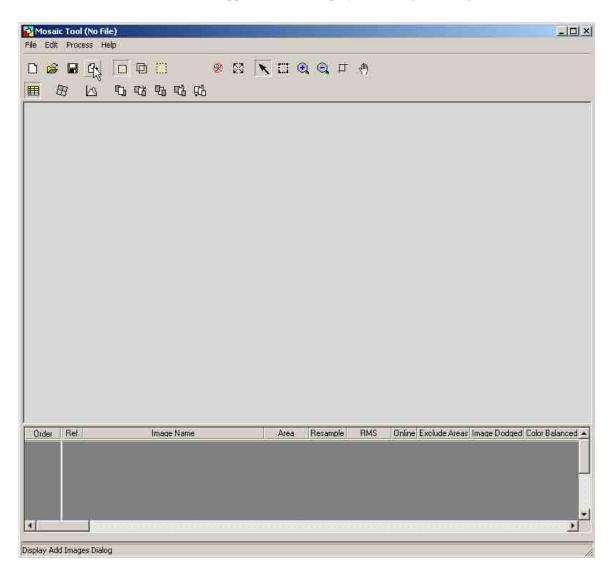
4.3 A "Data Preparation" button box will appear. Click "Mosaic Images" button.



4.4 A "Mosaic Images" button box will appear. Click "Mosaic Tool" button.



4.5 A "Mosaic Tool" window will appear. Click "Display Add Images Dialog" icon.



4.6 An "Add Images" dialog box will appear. Select all the necessary images (e.g. n14e120.img, n14e121.img, n15e120.img, n15e121.img) to be used. Then click "OK".

Add Images	×
File Image Area Options	
Look in: 🔄 srtm 💽 🖆 🖄 🏵	
14-15mosaic.img	OK
n 14e120.img n 14e121.img	Cancel
n15e120.img	Help
n15e121.img n16e120.img	
n 16e121.img Sirtm-aster3n.img	Recent
La Tardinasteront inig	Goto
File name: n15e121.img	
Files of type: IMAGINE Image (*.img)	
greyscale : 1201 Rows x 1201 Columns x 1 Band(s)	

4.7 The limits of the images selected will be shown in the "Mosaic Tool" window. Click "Set Mode for Input Images" icon.

Mosaic Tool (No File) File Edit Process Help							
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4 d. /image/philippine/img/		Entire	NN	0.0000	×		

4.8 Click "Display Color Correction Options Dialog" icon.

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Display Color Correction Options Dialog					h

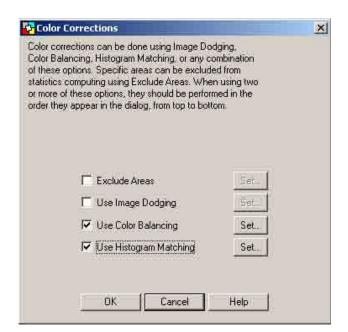
4.9 A "Color Corrections" dialog box will appear. Check "Use Color Balancing" box. Then click "Set...".

Color Corrections	×
Color corrections can be done using Image Dodg Color Balancing, Histogram Matching, or any com of these options. Specific areas can be excluded statistics computing using Exclude Areas. When u or more of these options, they should be performe order they appear in the dialog, from top to bottom	bination from Ising two d in the
🔽 Exclude Areas	Set.
🔲 Use Image Dodging	Set
Use Color Balancing	Set
🔲 Use Histogram Matching	Seta
Pixel Value Type Pixel Value	7
OK Cancel	Help

4.10 A "Set Color Balancing Method" dialog box will appear. Check "Automatic Color Balancing". Then click "OK".

🚰 Set Color Balancing Method	×
Color balancing can be performed automatically or manually. The automatic approach calculates color correction surface settings based on a default surface method (specified in Preferences). The manual approach allows the user to interactively adjust and visually verify the color balanced results image by image. Correction Method Automatic Color Balancing Manual Color Manipulation Bet	
Cancel	

4.11 Check "Use Histogram Matching" box. Then click "Set...".



4.12 A "Histogram Matching" dialog box will appear. Then click "Ok".

🔂 Histogram Mal	tching 🔀
Matching Method:	For All Images 🔹
Histogram Type:	Band by Band 💌
🔲 Use external refe	erence
Ext	ernal Reference
Histogram Source:	
💿 Image File 🛛 C	Parameters
Image File: (*.img)	
	ram Mean Std. Deviation 🔺
<u> </u>	
<u> </u>	Cancel Help

4.13 Click "Set Mode for Intersections" icon.

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-	3	Non	e	Overlay	d:/image	/philipp	ine/img/:	srtm/n15	be121.im	g	10		1	_	L
ai		p Function												2	

4.14 The overlap between images will be reflected. Click "Set Overlap Function" icon.

4.15 A "Set Overlap Function" dialog box will appear. Select "Average". Click "Apply". Then click "Close".

🔂 Set Overlap Function 🛛 🗙
Intersection Type:
 No Cutline Exists Cutline Exists
Select Function:
C Overlay
Average
C Minimum
O Maximum
C Feather
Apply Close Help

4.16 Click "Set Mode for Output Images" icon.

	Tool (No File) Process Help				<u>-0×</u>
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	' 🔺 fx	50			
	3		4		
	1		2		
Int.	Cutline	Function	Top Image	Smoothing Distance	Smoothing Filter
1	None	Average	d:/image/philippine/img/srtm/n14e121.img		
	None	Average	d:/image/philippine/ing/stm/n15e120.ing		
2	None	Average	d:/image/philippine/img/sttm/n15e121.ing		
			Ган жизда. р. жирринан индеоний сили сте со с ст.Ш.Д	1	Y
Set Mode for	Output Image:	s			

Mosaic Tool (No File) File Edit Process Help				
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Set Output Options Dialog.,,	në			

4.17 Click "Set Output Options Dialog" icon.

4.18 An "Output Image Options" dialog box will appear. Click "OK".

Dutput Image Options Define Output Map Area(s):	×
Method: Union of All Inputs]
ASCII Filename: (*.txt)	_
	2
Attribute For File Name:	2
Specify Collar Extent:	
Units: pixels 💌 Extent 0.000 🐺	3
Clip Boundary	
1	Ż
Change Output Map Projection	
Output Cell Size: (meters)	
X: 0.000900 🕂 Y: 0.000900	÷
Output Data Type: Signed 16 bit	•
OK Cancel Help	

4.19 Click "Run the Mosaic Process to Disk" icon.

Mosaic Tool (No File) File Edit Process Help			×
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1	2		
Output Filenan 1 1 Run the Mosaic Process to Disk			▲ ■ ■

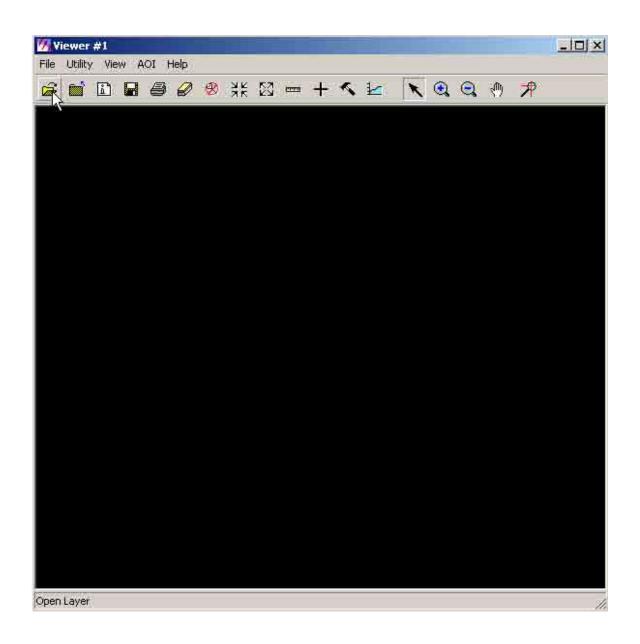
4.20 An "Output File Name" dialog box will appear. Browse and locate the folder where the output image file is to be saved. Type the output filename (e.g. mosaic1) in the "File name" box. Then click "OK".

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986FS	System Volume Information	OK
BAELicense	🦲 temp 🦲 training_manual	Cancel
📄 erdas_imagine9.1	🔁 VR1	Help
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jica_final	🛃 5_131.img	Recent
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le name: mosaic1		

4.21 The system will process the data. Click "OK" when done.

🚧 Mosaic		×
Job State: Percent Done:	Histogram Matching 88% 0 0000000000000000000000000000000000	
	OK Cancel Help	

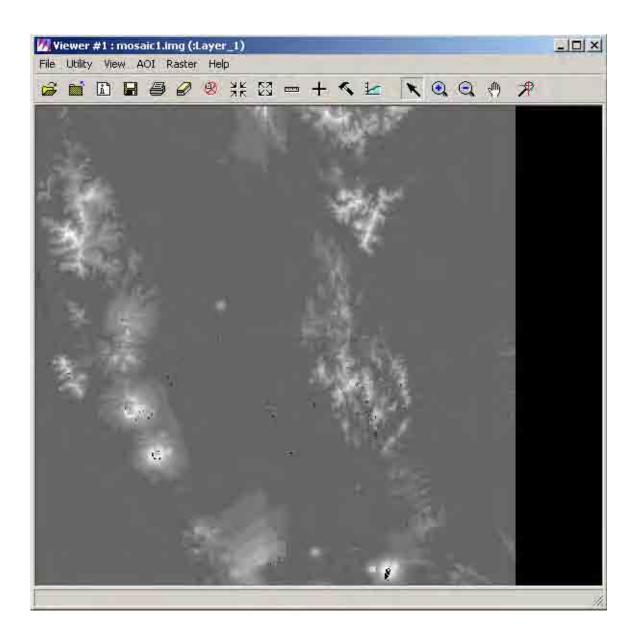
4.22 Click "Open Layer" in "Viewer window."



4.23 A "Select Layer To Add" dialog box will appear. Browse and locate the folder where the mosaic output file was saved. Select the output file (e.g. mosaic1.img). Then click "OK.

Look in: 💷 New Volume	(D:)	<u>*</u>
986FS	🧰 System Volume Information	ОК
BAELicense	🧰 temp 🛅 training_manual	Cancel
erdas_imagine9.1 image iica	VR1 (1) 05_278.img (1) 05_279.img	Help
] jica_final MSOCache	🔄 5_131.img 🔄 5_132.img	Recent.
music RECYCLER	mosaic1.img Prdat012.img	Goto
ile name: mosaic1.img		
iles of type: IMAGINE Ima	ige (*.img)	T *

4.24 The mosaic image will be reflected in the viewer window.



5. Image Enhancement

5.2

This procedure allows you to simulate natural color using SPOT Multispectral data as your input.

5.1 Open "Erdas Imagine 9.1". A "Select Viewer Type" dialog box will appear. Click "Classic Viewer". Then click "OK".

M Select	t Viewer Type	×
	Which type of viewer would you like to use?	
	 Classic Viewer 	
	C Geospatial Light Table	
<u> </u>	OK Cancel I	Help
	🗖 Don't ask me this question again.	
lick "Interpreter"	Interpreter icon.	



🚧 Image Interpreter	×		
Spatial Enhancement			
Radiometric Enhancement			
Spectral Enhancement			
Basic HyperSpectral Tools	75		
Advanced HyperSpectral Tools			
Fourier Analysis			
Topographic Analysis			
GIS Analysis			
Utilities			
Close Help			

5.3 An "Image Interpreter" button box will appear. Click "Spectral Enhancement" button.

5.4 A "Spectral Enhancement" button box will appear. Click "Natural Color..." button.

💋 Spectral Enhancement 💦 🔀			
Principal Comp			
Inverse Principal Comp			
Decorrelation Stretch			
Tasseled Cap			
RGB to IHS			
IHS to RGB			
Indices			
Natural Color			
Landsat 7 Reflectance			
Spectral Mixer			
Close Help			

5.5 A "Natural Color..." dialog box will appear. Click the "Input File" button.

11 11/24	10 12	
Input Fil	e: (*.img)	Output File: (*.img)
	R .	G
nput band spectral i	ange:	
Near infrared:	1 🕂 Red: 🚺	Green: 1
Data Type:		
Input none		Stretch Output Range.
1		
Output: Unsigne	ed 8 bit 🗾 Г	Ignore Zero in Stats.
Coordinate Type:	Subset Definition:	From Inquire Box
С Мар	ULX: 0.00	: LRX 0.00
File	ULY: 0.00	LRY 0.00
1	Babdy	AOI

5.6 An "Input File" dialog box will appear. Browse and locate the folder of the input image file (e.g. 20005051multicolor.img). Select the input file. Then click "OK".

Input File:			x
File Mu	Itiple		
Look in: 🦲	l spot	· 🖻 😁 😹 谢	
process			OK.
THE R. LEWIS CO., LANSING MICH.	8multicolor.img 9multicolor.img		Cancel
2005051	9panchromake img		Help
A PROPERTY OF A	'8multicolor.img 060426.img		
spot_20	061121.img		Recent
			Goto
-	20050519multicolor.img		
File name:			
Files of type:	IMAGINE Image (*.img)	× *	
truecolor : 42	243 Rows x 4243 Columns x 4 Band(s)		

5.7 Click the "Output File" button.

	And the second second	2 St 2 C 1 C 2 S 2 S 2 S 2 S 2 S 2 S 2 S 2 S 2 S 2	Contract Contract
Input Fi	le: (*.img)	Output File	(*.img)
20050519multicolo	r.img 🔀	_	9
nput band spectral	range:		-4
Near infrared	4 🕂 Red:	2 🕂 Green	1 1
Data Type:			
Input Unsigned	_8_bit	F Stretch Output F	lange.
10 (pro ar			
Output: Unsign	ed 8 bit 🗾	🔲 Ignore Zero in S	ats.
Output: Unsign Coordinate Type:	ed 8 bit 💽		ats. nquire Box
	(1001) 200 100 -	From	
Coordinate Type:	Subset Delinition:	From	nquire Box
Coordinate Type:	Subset Definition: ULX: 120.85 ULY: 15.13	From LR X: 12 LR Y: 14	nquire Box

5.8 An "Output File" dialog box will appear. Browse and locate the folder of the Output image file. Type the output file name (e.g. 20005051multicolor.img) in the "File name" box. Then click "OK".

386FS	System Volume Information	● C* 图 图 ● 5_131.img	0K
BAELicense dgtopobasemap	itemp itaining_manual	5_132.img	Cancel
erdas_imagine9.1	VR1	mosaic2.img	Help
jica	🛃 05_279.img	mosaic_spot.im	
jica_final MSOCache	🟝 1_205.img 🔄 1_206.img	mosaic_trial.img	Recent
music	2_374.img	Er pidato iz.ing	Goto
RECYCLER	🛃 2_375.img		
d			
le name: 20050519multi	icolor.img		

5.9 In the "Input band spectral range" set "Near Infrared" to 1, "Red" to 2, and "Green" to 3. Then click "OK".

🌇 Natural Color			×
Input F	ile: (*.img)	Output P	File: (*.img)
20050519multicol	20050519multicolor.img I 🙀 200		or.img 🛛 😂
input band spectral	range;		
Near infrared:	1 🕂 Red:	2 ÷ Gre	en: E 👬
Data Type:			
Input Unsigned	I_8_bit	🗐 Stretch Outpu	ut Range.
Output Unsign	ed 8 bit 💌	🗂 Ignore Zero ir	n Stats.
Coordinate Type:	Subset Definition:	Fro	m Inquire Box
	ULX: 120.85	÷ LRX	121.42
C File	ULY; 15.13	ER Y:	14.65 🔆
C	K Ba	tch A() j
Ca	ncel Vie	w	felp
Select the input file			

5.10 Wait till the system process the data. Click "OK" when done. Open a viewer and select the output file. The natural color of the image will be shown in the viewer window.



6. Pan-Sharpen.

This procedure enables you to integrate imagery of different spatial resolutions (pixel size). Integrating high resolution imagery single band such as SPOT panchromatic (10m Resolution) and Multi-spectral which generally has a lower resolution produces a high resolution Multi-spectral imagery. This improves the interpretability of the data by having high resolution information of the colored image.



6.2 An "Image Interpreter" button box will appear. Click "Spatial Enhancement" button.

乃 Image Interpreter	×
Spatial Enhancemen	ţ
Radiometric Enhancem	vent
Spectral Enhanceme	nt
Basic HyperSpectral T	ools
Advanced HyperSpectral	Tools
Fourier Analysis	o –
Topographic Analysi	s
GIS Analysis	
Utilities	1
Close	Help

6.3 A "Spatial Enhancement" button box will appear. Click "Resolution Merge...".

1	😽 Spatial Enhancement	×	
	Convolution		
	Non-directional Edge		
	Focal Analysis		
	Texture		
	Adaptive Filter		
	Statistical Filter		
	Resolution Merge		
	Mod. IHS Resolution Merge		
	HPF Resolution Merge		
	Wavelet Resolution Merge		
	Ehlers Fusion		
	Crisp		
	Close Help		

6.4 A "Resolution Merge" dialog box will appear. Click the "Input File" button in the "High Resolution Input File" box.

High Resolution Input File: (*.img)	Multispectral Input File: (*.img)	Output File: (*.img)
Select Layer	Number of layers: 0	
Method:	Resampling Techniques:	Output Options:
Principal Component	C Nearest Neighbor	F Stretch to Unsigned 8 bit
C Multiplicative	C Bilinear Interpolation 🔽 Ignore Zero in Stats.	
C Brovey Transform		
Layer Selection:		Data Type:
Number of Multispectral Input layers:		Gray Scale: None
Select Layers 1	Multispectral: None	
Use a comma for separated list (i.e. 1.3.5.) o using a """ (i.e. 2:5.).	or enter ranges	Output: Float Single
GK Batch	View ADI	Cancel Help
Dation		

6.5 A "High Resolution Input File" dialog box will appear. Browse and locate the folder of the input image file (e.g. panchro.img). Select the input file. Then click "OK".

ile Multiple			
ook in: 🗐 New Volume (D:)			
System Volume Information	🕭]5_131.img	🛃 pansharpen.img	OK.
temp	25_132.img	🛃 prdat012.img	8
] training_manual	imagery.img	-	Cancel
JVR1	amosaic1.img	1	Help
]05_278.img	mosaic2.img		000140
]05_279.img	mosaic3.img		
]1_205.img	mosaic_spot.img		Recent
]1_206.img	mosaic_trial.img	1	22
]2_374.img	atural.img	-	Goto
]2_375.img	🎒 panchro.img		
4			
e name: panchro.img			
s name. [Pariono.ing			
es of type: IMAGINE Image (timg)	* *	197. ·

6.6 Click the "Input File" button in the "Multispectral Input File" box.

M Resolution Merge		×
High Resolution Input File: (*.img)	Multispectral Input File: (*.img)	Output File: (* img)
panchro.img		
Select Layer 1	Number of layers: 0	
Method:	Resampling Techniques:	Output Options:
Principal Component	C Nearest Neighbor	E Stretch to Unsigned 8 bit
C Multiplicative	Bilinear Interpolation	🗖 Ignore Zero in Stats.
C Brovey Transform	Cubic Convolution	
Layer Selection	1. J .	Data Type:
Number of Multispectral Input layers:		Gray Scale: Unsigned 8 bit
Select Layers: 1	Multispectral: None	
Use a comma for separated list (i.e. 1,3,5) (using a $^{\alpha,\alpha}$ (i.e. 2:5)	or enter ranges	Output: Float Single
0K. Batch	View A01	Cancel Help
Select the Multispectral input file.		

6.7 Click the "Input File" button in the "Multispectral Input File" box. Browse and locate the folder of the input image file (e.g. imagery.img). Select the input file. Then click "OK".

File Multiple			
Look in: 💷 New Volume	[D:]		
986FS	🚞 System Volume Information	FR 5 5 1	OK
BAELicense	iemp	5_132.img	808531
🔄 dgtopobasemap	🔄 training_manual	imagery.img	Cancel
🔁 erdas_imagine9.1	🔁 VB1	🛃 mosaic1.img	Help
🔄 image	🚰 05_278.img	🛃 mosaic2.img 🚽	
📄 jica	🛃 05_279.img.	🛃 mosaic3.img	
📄 jica_final	🏝 1_205.img	🛃 mosaic_spot.img	Recent
MSOCache	街 1_206.img	街 mosaic_trial.img 🚽	10000000
📄 music	🕭 2_374.img	🛃 natural.img	Goto
RECYCLER	🛃 2_375.img	🛃 panchro.img 👘	
4			
ile name: imagery.img			
iles of type: IMAGINE Ima	ae (*.ima)	- *	

6.8 Click the "Output" button in the "Output File" box.

Resolution M	erge		x
High Resolution	on Input File: (*.img)	Multispectral Input File: (*.img)	Output File: (*.img)
panchro.img	e	imagery.img	
Select Layer:	1	Number of layers: 4	
Method:		Resampling Techniques:	Output Options:
Principal Comp Multiplicative	ponent	 Nearest Neighbor Bilinear Interpolation 	Stretch to Unsigned 8 bit Ignore Zero in Stats.
C Brovey Transf	orm	 Cubic Convolution 	
Layer Selection:			Data Type:
Number of Multisp	ectral Input layers:	4	Gray Scale: Unsigned 8 bit
Select Layers:	1:4		Multispectral: Unsigned 8 bit
Use a comma for s using a "" (i.e. 2.5	:eparated list (i.e. 1,3,5) 5 }	or enter ranges	Output: Float Single 👤
0K	Batch	View ADI	Cancel
Select output file.			

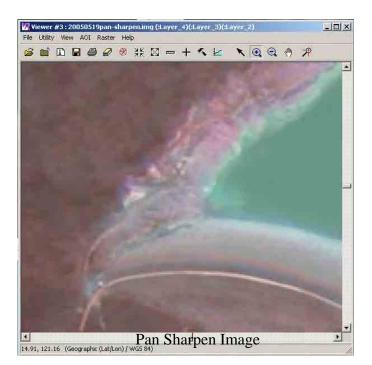
6.9 An "Output File" dialog box will appear. Browse and locate the folder where the output image is to be saved. Type the output filename (e.g. pansharpen.img) in the "File name" box. Then click "OK"

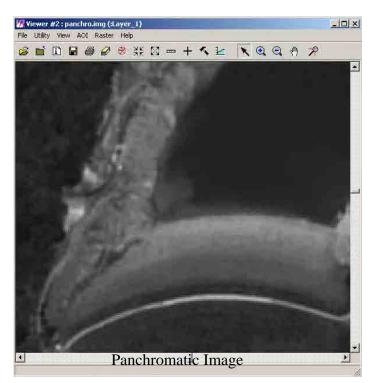
986FS	System Volume Information	25_131.img	ОК
BAELicense dgtopobasemap	. 🧮 temp 🛅 training_manual	5_132.img	Cancel
erdas_imagine9.1	→ VR1 → VR1 → 05_278.img	mosaic1.img	Help
jica	🛃 05_279.img	mosaic3.img	
jica_final MSOCache	🕭 1_205.img 🚱 1_206.img	mosaic_spot.img	Recent
music RECYCLER	2_374.img 2_375.img	natural.img	Goto
1	HITE ASSAULTION CO		

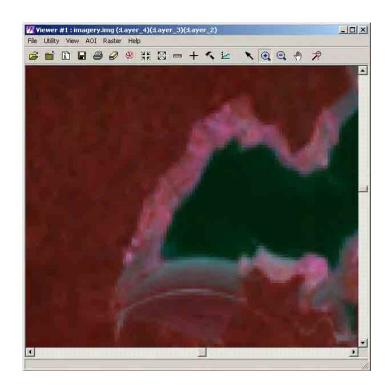
6.10 Click "Nearest Neighbor" in the "Resampling Techniques". Then click "OK"

77 Resolution Merge		
High Resolution Input File: (*,img)	Multispectral Input File: (*.img)	Output File: (*.img)
20050519panchromatic.img	20050519multicolor.img	pansharpen.img 📿
Select Layer 1	Number of layers: 4	
Method:	Resampling Techniques:	Output Options:
 Principal Component Multiplicative Brovey Transform 	Nearest Neighbor Bilinear Interpolation Cubic Convolution	 Stretch to Unsigned 8 bit Ignore Zero in Stats.
Layer Selection	1	Data Type:
Number of Multispectral Input layers:	4	Gray Scale: Unsigned 8 bit
Select Layers: 1:4		Multispectral: Unsigned 8 bit
Use a comma for separated list (i.e. 1.3.5)) using a "``''(i.e. 2:5)	or enter ranges	Output: Float Single 💌
OK Batch	View A01	Cancel Help
OK Batch The technique to be used to resample the n		

6.11 Wait till the system process the data. Click "OK" when done. Open a viewer and select the output file. The pan sharpened image will be shown in the viewer window.







7. Image (supervised / unsupervised) Classification

Classification is the process of sorting pixels into a finite number of individual classes, or categories of data, based on their data file values. If a pixel satisfies a certain set of criteria, then the pixel is assigned to the class that corresponds to that criteria.

For the first part of the classification process, the computer system must be trained to recognize patterns in the data. Training is the process of defining the criteria by which these patterns are recognized. The result of training is a set of signatures, which are criteria for a set of proposed classes.

There are two ways to classify pixels into different categories:

- · supervised
- · unsupervised

7.1 Supervised classification

Many of the Classification tools can also be accessed through the Signature Editor This utility allows you to perform a supervised classification on an [.img format] using various decision rules. This utility can also be accessed from the Signature Editor. Select Supervised Classification from the Classification menu to open this Supervised Classification dialog.

In order to create signatures, you must have the image you are classifying opened in a Viewer.

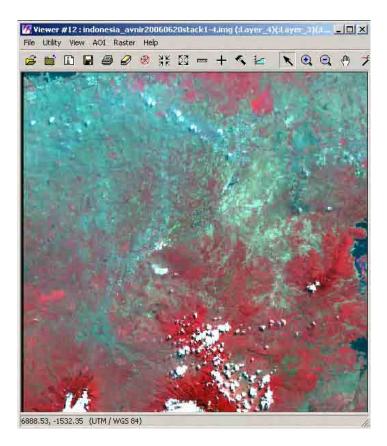
7.1.1 Open "Erdas Imagine 9.1". A "Select Viewer Type" dialog box will appear. Click "Classic Viewer". Then click "OK".

Select Viewer Type	×
Which type of viewer would you like to use?	
 Classic Viewer 	
Geospatial Light Table	
Cancel Help	
🗖 Don't ask me this question again.	

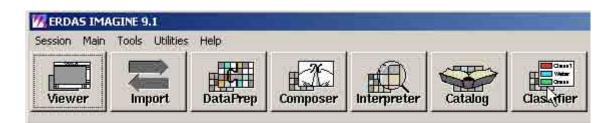
7.1.2 The classic menu bar and a viewer window will appear.

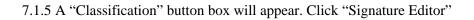
7 ERDAS IMAGINE 9.1										
Session Main Tools Utilities	Help									
Viewer Import	DataPrep Co	mposer Interpre	ter Catalog	Classifier	Modeler	Vector	Radar	Virtual GIS	Stereo	RutoSync

7.1.3 On the viewer window click the "Open Layer" icon. Browse and locate folder of the file (e.g. Indonesia_AVNIR20060620stack1-4.img) to be classified. Select the input file. Then click "OK".



7.1.4 Click "Classifier" in the main menu icon.









A "Signature Editor" dialog box

ile	Edit	View	Evalu	Jate	Featu	ire C	lassif	y Help						
2	D	+Ļ	+43	≣Ļ	Σ	γ			A					
Clas	s #	×	S	ignati	ure Nai	me		Color	Red	Green	Blue	Value	Order	-54
-														Ī
														l
														-
														┝
	l													

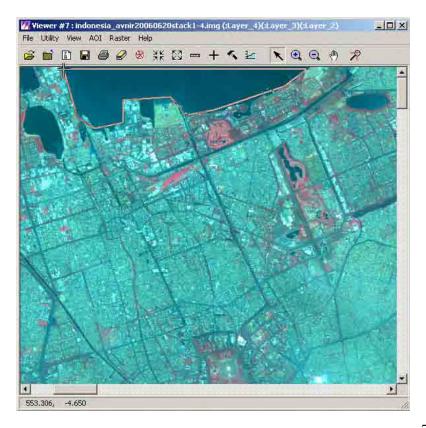
7.1.7 Click "AOI" and select "Tools".



7.1.8 An "AOI" Icon menu will appear. Click the "Create Polygon" (manual digitizing of sample classification area limit).

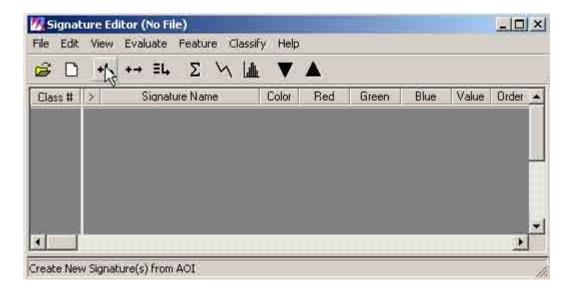


7.1.9 On the viewer window, digitize a particular area feature and double click at the end of the selection to create a polygon.



7.1.10

Click "Create New Signature" in the "Signature Editor" dialog box.



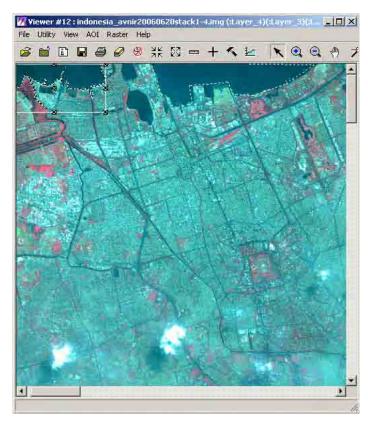
7.1.11 A signature name will be added.

77 Signatu File Edit	<mark>ire Editor (No File)</mark> View Evaluate Feature Classi	ify Help						×
🖨 🗅	+4 +→ ≣4 Σ \\ [L 🔻	A					
Class #	> Signature Name	Color	Red	Green	Blue	Value	Order	1
1	> Class 1		0.000	0.341	0.424	1	1	1
								2
							2	1
								3

7.1.12 Click "Region Grow" icon.



7.1.13 Select a particular area, click left mouse button and a sample region (polygon) limit area will automatically be created.



"Region Growing Properties" icon.



7.1.14 Click

7.1.15 A "Region Growing Properties" dialog box will appear. Adjust "Spectral Euclidean Distance" value. Then click "Redo".

Neighborhood:	!	Geographic Const	raints;
	T Area:	1000.00	# pixels
ΨЩ	🗂 Distance:	0.00	pixels 💌
Spectral E	Euclidean Distan	ce: 20	*
	Set Co	nstraint AOI	Options
Grow at Inquire	E ENALGER AN	Construction of the second second second	

7.1.16 Select and create at least four sample classification area limit of the same feature class (e.g. water area). Then create each signature. Edit signature name (e.g. water 1)

Class #	>	Signature Name	Color	Red	Green	Blue	Value	Order
11	Г	water1		0.000	0.351	0.433	1	1
2		class 2		0.000	0.363	0.416	2	2
	E	class 3		0.000	0.307	0.364	3	3
4		class 4		0.000	0.403	0.465	4	4

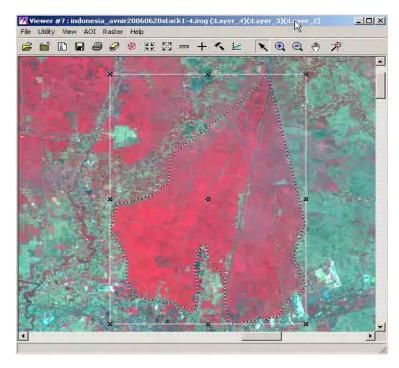
7.1.17 Select all the signature name created and click "Merge Selected Signatures.

Class #	>	+4 +→ the Σ \\ Later Signature Name	Color	Red	Green	Blue	Value	Order
CI035 #		water1	COIO	0.000	0.351	0.433	1	1
		water 2		0.000	0.363	0.435	2	
-		water 3		0.000	0.307	0.364	3	2
		water 4		0.000	0.403	0.465	4	4
5	>	Class 1		0.000	0.338	0.409	5	4

7.1.18 Edit the created signature name from the merge command. Select the previous created signatures. Put pointer arrow on the "Class #" and click right mouse button. Select "Delete Selection"

à	<u>n</u> +4 +→ 34	ΣΜ		Δ.				
Class	# > Signati	ure Name	Color	Red	Green	Blue	Value	Order
	water1	24		0.000	0.351	0.433	Ť	Ť
	Row Selection			0.000	0.363	0.416	2	2
-	323(112)			0.000	0.307	0.364	3	3
	Select None			0.000	0.403	0.465	4	4
	Select All Invert Selection			0.000	0.338	0.409	5	5
	Delete Selection							
	Irisett Rów							

7.1.19 Zoom in to another area and select another feature class using the create polygon icon or the "Region Grow" icon. At least four sample classification area limit of the same feature class (e.g. paddy field). Then repeat steps 7.1.15 to 7.1.18.



7.1.20 When

all the signature name of feature classes have all been created, click "File" and select "Save As"

New Save	Signature Name	Color	Red	Green	Blue	Value	Order
Save As			0.000	0.318	0.385	3	9
Report	hyly field	1	0.692	0.405	0.483	6	6
Close	st	1	0.578	0.333	0.339	5	12
Close All	d		1.000	1.000	1.000	7	16
5	building/house	с. 	0.429	0.729	0.736	8	20
6 >	open area		0.506	0.715	0.636	9	25

7.1.21 A "Save Signature File As" dialog box will appear. Click the "Signature Files" output button.

🚧 Save Signature File As	×
Signature Files: (*.sig)	
indonesia.sig	e
 986FS BAELicense dgtopobasemap erdas_imagine9.1 image jica 	×
Rew Volume (D:)	•
Which Signatures:	
All O Selected	
OK Cancel H	lelp

7.1.22

A "Signature Files"

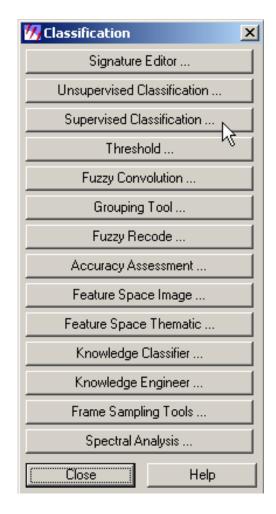
dialog box will appear. Browse and locate the folder where the output image is to be saved. Type the output filename (e.g. Indonesia.sig) in the "File name" box. Click "OK". Then click "OK" in the "Save Signature File As" dialog box.

Signature Files:		
File		
Look in: 💷 New Volume	(D:)	📠 😁 🖮 🖹
986FS	System Volume Information	Пок
BAELicense	itemp	Cancel
🔄 erdas_imagine9.1 📄 image	VB1	Help
iica iica_final MSOCache		Recent
music RECYCLER		Goto
File name: indonesia		
Files of type: Signature (*.s	ig)	
Ű.		

7.1.23 Click "Classifier" in the main menu icon.

ERDAS IMA	GINE 9.1				
Session Main	Tools Utilities	Help			
Viewer	Import	DataPrep	Composer	Catalog	Class

7.1.24 "Classification" button box will appear. Click "Supervised Classification".

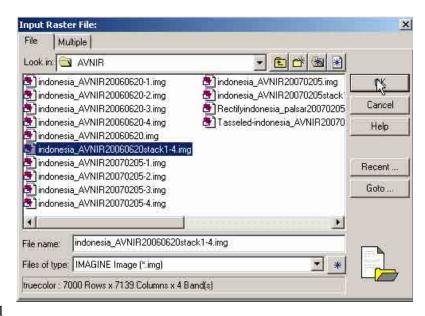


7.1.25 A "Supervised Classification" dialog box will appear. Click the "Input Layer" button.

Input Raster File: (*.img)	Input Signature	File: (*.sig)
		<u> </u>
ssified File: (* img)	Distance File	
Attribute Options	Filename (*	annd) G
Fuzzy Classification	2 Best Classes	Pel Pinel
C	ecision Rules:	
D Non-parametric Rule	Decision Rules:	
		-
Non-parametric Rule	None	1
Non-parametric Rule Overlap Rule	None Parametric Aule	•
Non-parametric Rule Oyerlap Rule: Unclassified Rule:	None Parametric Alule Parametric Rule	

Name of Input Layer to Classify

7.1.26 An "Input Raster File" dialog box will appear. Browse and locate folder of the raster file (e.g. Indonesia_AVNIR20060620stack1-4.img) to be supervised. Select the input file. Then click "OK".





.27 Click the "Input Signature File" button.

Input Raster File: (*.img)	Input Signature File: (*.sig)
ndonesia_avnir20060620st/	2
lassified File: (*.img)	Distance File Filenamer (* img)
Attribute Options.	
Fuzzy Classification	2 - Best Classes Per Poel
D	ecision Rules:
D Non-parametric Rule;	Pecision Rules:
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
Non-parametric Rule;	None
Non-parametric Rule; Overlap Rule;	None
Non-parametric Rule; Överlap Rule; Unclassified Rule;	None

7.1.28 An "Input Signature File" dialog box will appear. Navigate thru the directory and locate folder of the signature file (e.g. Indonesia.sig) that was created. Select the input file. Then click "OK".

File		
Look in: 🖃 New Vol	ume (D:)	
🔄 986FS 🛅 BAELicense	🧰 System Volume Information	OK
gtopobasemap	itaining_manual	Cancel
📄 erdas_imagine9.1 🍋 image 🛅 jica	Dindonesia, sig	Help
📄 jica_final 📄 MSOCache		Recent
MISCLER		Goto
File name: indonesia	sig	
iles of type: Signature	(*.sig)	



Click the "Classified Output File" button.

formed ID system Films (* 1995)	Marca Classica Classica
Input Raster File: (*.img)	Input Signature File: (*.sig)
indonesia_avnir20060620st	💐 🛛 🚺 🗖
Classified File: (*.img)	Distance File
Attribute Options	
Fuzzy Classification	2 Berl Gessex Pier Pixel
C	Decision Rules;
D Non-parametric Rule	Decision Rules:
	11//
Non-parametric Rule	None
Non-parametric Rule	None
Non-parametric Rule Overlap Rule Unclassified Rule:	None

7.1.30 A "Classified Output File" dialog box will appear. Browse and locate the folder where the output classified image is to be saved. Type the output filename (e.g. supervised.img) in the "File name" box. Then click "OK".

pok in: 🥏 New Volume			
<b>]</b> 986FS		natural-spot.img	OK
BAELicense		pansharpen.img	Cancel
dgtopobasemap	training_manual	spot-multi.img	And the state of a
] erdas_imagine9.1 ] image	🔄 VR1 👌	spot.img spot_pan.img	Help
inaye jica	228multi.img	spot_pansharpe	
jica_final		spot_xs.img	Recent
MS0Cache	5341.img		Hecent
music	5342.img		Goto
RECYCLER	🛃 imagery.img		
		•	
e name: supervised			

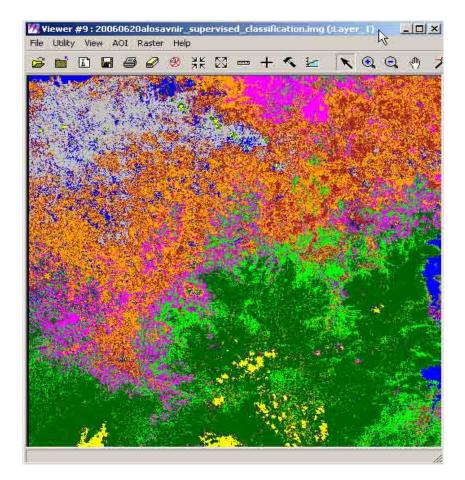
7.1.31 Set "Parallelepiped" in the "Non-parametric Rule". Then click "OK".

Input Raster File: (* img)	Input Signature File: (*,sig)
avnir20060620stack1-4.img	₹ I Indonesia.sig
lassified File: (* img)	Distance File
supervised.img	₹ Filename: (* img)
Attribute Options.	
Fuzzy Classification	2 Best Classes Per Pixel
D	
0,	ecision Rules;
Non-parametric Rule:	Parallelepiped
Non-parametric Rule:	Parallelepiped
Non-parametric Rule: Overlap Rule:	Parallelepiped
Non-parametric Rule: Overlap Rule: Unclassified Rule:	Parallelepiped

7.1.32 The system will process the data. Click "OK" when done.



7.1.33 Open a viewer and open the created image (e.g. supervised.img)



#### 7.2 Unsupervised classification

This section shows you how to create a thematic raster layer by letting the software identify statistical patterns in the data without using any ground truth data.

况 Classification 🛛 🗙		
Signature Editor		
Unsupervised Classification		
Supervised Classification		
Threshold		
Fuzzy Convolution		
Grouping Tool		
Fuzzy Recode		
Accuracy Assessment		
Feature Space Image		
Feature Space Thematic		
Knowledge Classifier		
Knowledge Engineer		
Frame Sampling Tools		
Spectral Analysis		
Close Help		

7.2.1 Open a viewer and open the created image (e.g. supervised.img)

7.2.2 An "Unsupervised Classification (Isodata)" dialog box will appear.

Click the "Input Raster File" button . Navigate thru the directory and select the image file (e.g. Indonesia_AVNIR20060620stack1-4.img). Click

the "Output Cluster Layer" button . Navigate to the directory where you want to store your output image, and type the name of the new file (e.g. unsupervised-1.img). Uncheck "Output Signature Set". Then click "Color Scheme Options" button.

🕖 Unsupervised Classification	(Isodata)
Input Raster File: (*.img) indonesia_avnir2006062	Input Signature File: (*.sig)
Voutput Cluster Layer Filename: (*.img) unsupervised-1.img	Filename: (*.sig)
Clustering	Uptions:
	se Signature Means
Number of Classes:	2
Initializing Options	Color Scheme Options
Processing	g Options:
Maximum Iterations: 6 Convergence Threshold: 0 Classify zeros	* Skip Factors: 950 * X: 1 * Y: 1 *
OK Batch A0	Cancel Help
Options for Setting Output Color Sch	eme

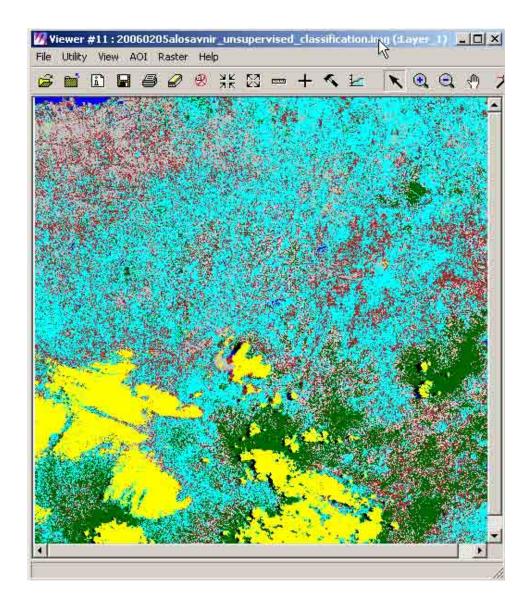
7.2.3 A "Output Color Scheme Options" dialog box will appear. Click "Approximate True Color". Set "Red" to 3, "Green" to 2, and "Blue" to 1. Then click "Close".

Output Color	• Approxim		Color	6	
Red: 3	<b>Green</b> 2	÷	Blue:	D	4
	ose	Ĥ	Help	1	_

7.2.4 Set "Number of Classes" to 6 (depends on how many classes you want to generate). Click "OK" in the "Unsupervised Classification (Isodata)" dialog box.

M Unsupervised Classification	(Isodata)
Input Raster File: (*.img)	Input Signature File. (* sig)
indonesia_avnir2006062	
I Output Cluster Layer Filename: (*,img)	Dutput Signature Set
unsupervised-1.img 📿	2
Clusterin	g Options:
Initialize from Statistics C L     Number of Classes     Initializing Options	Jse Signature Means
Processir	ng Options:
Maximum Iterations: 6 Convergence Threshold. 0 Classify zeros	Skip Factors:           950
OK Batch AD	)    Cancel   Help

7.2.5 Open a viewer and open the created image (e.g. unsupervised-1.img)



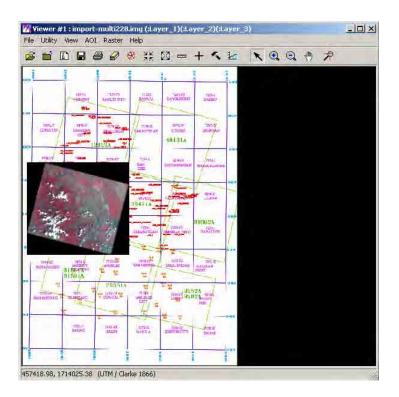
#### 8. Geometric Correction

Rectification is the process of projecting the data onto a plane and making it conform to a map projection system. Assigning map coordinates to the image data is called georeferencing. Since all map projection systems are associated with map coordinates, rectification involves georeferencing. The orthorectification process removes the geometric distortion inherent in imagery caused by camera/sensor orientation, topographic relief displacement, and systematic errors associated with imagery.

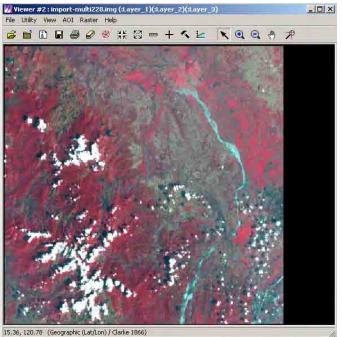
Orthorectified images are planimetrically true images that represent ground objects in their true "real-world" X and Y positions. For these reasons, orthorectified imagery has become accepted as the ideal reference image backdrop necessary for the creation and maintenance of vector data contained within a GIS.

By performing space resection, the effects of camera/sensor orientation have been considered and removed. By defining a DEM or constant elevation value (ideal for use in areas containing minimal relief variation), the effects of topographic relief displacement can be considered and removed.

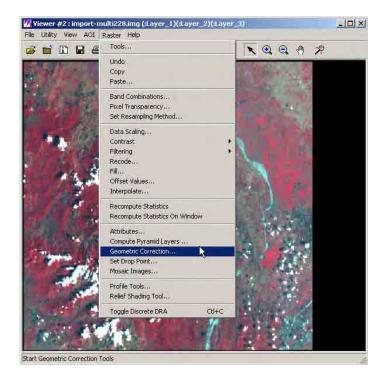
8.1 Open "Erdas Imagine 9.1". A "Select Viewer Type" dialog box will appear. Click "Classic Viewer". Then click "OK". Open index file (e.g. 50000index_alls.img) and the image (e.g. import-multi228.img).



8.2 Open another viewer window and open the image to be rectified.



8.3 In the image rectified window, click "Raster" and select "Geometric Correction...".



to be

8.4 A "Set Geometric Model" dialog box will appear. Select "Polynomial". Then click "OK".

奶 Set Geometric Model	x
Select Geometric Model:	
QuickBird RPC ORBIMAGE RPC CARTOSAT RPC IRS Landsat	
Polynomial Projective Transform Reproject Rubber Sheeting	
Open Existing Model	
Use Existing Calibration	
OK Cancel Hel	Þ

8.5 A "Polynomial Model Properties" dialog box will appear. Then click "Close".

Polynomial Model Properties (No File)	_0)
Parameters Transformation Projection	Apply
Polynomial Order: 1	Reset
	Save
Load CFF File	Save As
	Close
	Help
	+
tatus: Model has no solution.	

8.6 A "GCP Tool Reference Setup" dialog box will appear. Click "Keyboard Only". Then click "OK".

猊 GCP Tool Refe	rence Setup	×
Collec	t Reference Points	From:
C Existing Viewe	r	
C Image Layer (N	lew Viewer)	
C Vector Layer (1	New Viewer]	
C Annotation Lay	ver (New Viewer)	
C GCP File (, gcc	1	
C ASCII File		
C Digitizing Table	et (Current Configur	ation)
C Digitizing Table	et (New Configuration	on)
· Keyboard Only	Ĺ	

8.7 A "Reference Map Information" dialog box will appear. Click "Add/Change Map Projection".

	ce Map Informatio urrent Reference Map	
<b>Projection:</b> Spheroid Zone Numbe Datum	Unknown	
Map Units	: Other Add/Change Map Pro	Dijection
C OK	Cancel	Help

8.8 A "Projection Chooser" dialog box will appear. Set "Geographic" in "Categories". Select "Lat/Lon[WGS 84] in "Projection". Then click "OK".

77 Projection Chooser	×
Standard Custom	
Categories Geographic	
Projection Lat/Lon (Clarke 1866) Lat/Lon (WGS 84)	
Lat/Lon (WGS 84)	
	Cancel
	Help
	<b>F</b>
	I ULP

8.9 Click "OK" in the "Reference Map Information".

	1.0			-
🖊 Referer	ice Map II	nformation	n	1
C	urrent Refe	erence Map	Projection:	
Projection	Geograp	phic (Lat/Lor	'nl	
Spheroid:	WGS 84			
Zone Numb	en			
Datum: V	/GS 84			
				- 101
Map Unit	s: Deg	grees		-
	Add/Char	nge Map Pro	jection	1
3		and an an a second		
	IN			

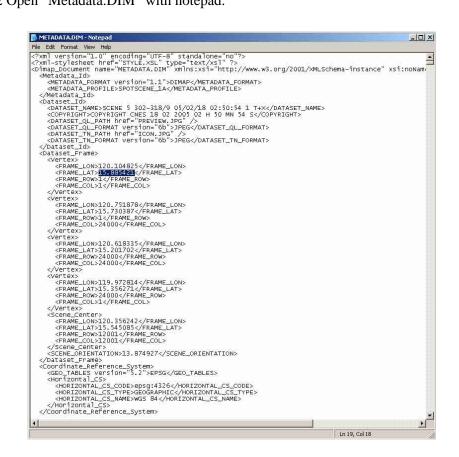
8.10 A "GCP Tool" dialog box will open.

Σ¢		X	O		<b>**</b>	Z	2Ş	1											
- 3	Point ID		> 6	Color	Xinp	.at	3	Input	>	X Ret.	Y	Ref.	Type	×Residual	Y Residual	RMS Error	Contrib.	Match	
P #1		-	>				-		>		T	1	Control		1	[	1		
	3	Point ID	Point ID	Point ID > 0	Point ID > Color	Point ID > Color X Inpl	Point ID > Color X Input	Point ID > Color X Input	Point ID > Color X Input Y Input	Point ID > Color X Input Y Input >	Point ID > Color X Input Y Input > X Ref.	Point ID > Color X Input Y Input > X Ref. Y1	Point ID > Color X Input Y Input > X Ref. Y Ref.	Point ID > Color X Input Y Input > X Ref. Y Ref. Type	Point ID > Color X Input Y Input > X Ref. Y Ref. Type X Residual	Point ID > Color X Input Y Input > XRef. YRef. Type XResdual YResidual	Point ID > Color X Input Y Input > X Ref. Y Ref. Type X Residual Y Residual RMS Error	Point ID > Color X Input Y Input > XRef. YRef. Type XResidual YResidual RMS Error Contrib.	Point ID > Color X Input Y Input > XRef. Y Ref. Type XReedual YResidual RMS Error Contrib. Match

8.11 Using the explorer navigate thru the directory and access "Metadata.Dim" file which contains the metadata of the image (2005022mlti).

File Edit View Favorites To	ols Help				1 1
🌀 Back + 👝 - 🏂 💭	Search 💦	Folders	9 111-		
Address D:\image\philippine\SPO	r-geotif\200	50228multi\SCENE01			🔹 🔁 G
Folders	×	Name -	Size	Туре	Date Modified
<ul> <li>Desktop</li> <li>My Documents</li> <li>My Computer</li> <li>My Computer</li> <li>My Computer</li> <li>Second State</li> <li>New Volume (Dr)</li> <li>986F5</li> <li>984ELicense</li> <li>dgtopobasemap</li> <li>cebu_aertal_photo</li> <li>training_manual</li> <li>cebu_aertal_photo</li> <li>training_manual</li> <li>cebu_aertal_photo</li> <li>training_manual</li> <li>mage</li> <li>CD5</li> <li>CD5</li> <li>CD6</li> <li>ERDAS IMAGINE res</li> <li>indonesia-ALOS</li> <li>philippine</li> <li>ASTER-dat</li> <li>cebu_aertal_photo</li> <li>coboutarea</li> <licoboutarea< li=""> <li>coboutarea</li> <licoboutarea< li=""> <li>cobou</li></licoboutarea<></licoboutarea<></ul>	ulti 1 ulti unchro ulti hro534	ICON.jpg	6 KB 141,128 KB 1,688,063 KB 5,108 KB 301 KB 33 KB	Microsoft Office Da	6/7/2006 10:26 AM 10/5/2007 10:56 AM 6/7/2006 10:26 AM 6/7/2006 10:26 AM 6/7/2006 10:26 AM 6/7/2006 10:26 AM 10/1/2007 10:54 AI

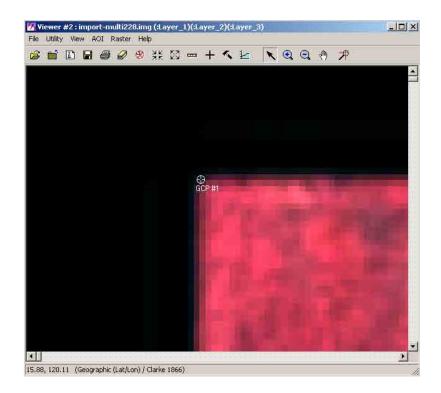
8.12 Open "Metadata.DIM" with notepad.



8.13 Click "Create GCP" icon.

2 2	2 20	M	X	କ୍	b 4	N 🕂	Z Z	\$										
irst #		Point ID		> 0	olor	XInput	I	Y Input	2	X Ref.	Y Ref.	Type	× Residual	Y Residual	RMS Error	Contrib.	Match	
1	GCP #1			>	1		1		>		[	Control	1	1	[	1		

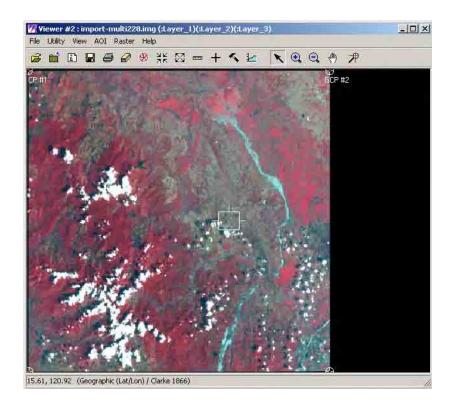
8.14 Zoom in on the upper left corner of the image and click on the corner.



8.15 Copy value of the Lon (e.g. 120.104825) and Lat (e.g. 15.885421). Paste it inside the XRef and YRef column respectively of the "GCP Tool" dialog box.

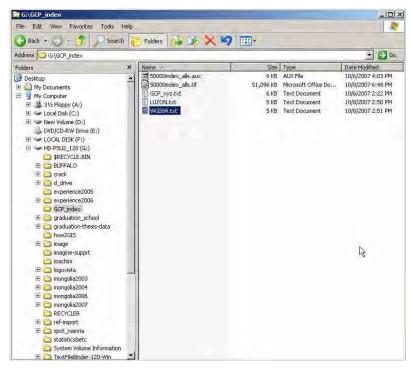
2	Σσ 🗹	XG	) D	14 🕂 Z	23									
14 1	Point ID	15	Color	×Input	Y Input >	× Ref.	YRet	Type	X Residual	Y Residual	RMS Error	Contrib.	Match	
11	GCP #1	1	1	120.106	15.883	120.105	15.685421	Control		1		1		
2	GCP #2	>			>		1	Control				0		
			*		2000		15	-		<i>t.</i>		10		

8.16 Click one at a time the next three corners of the image in clockwise selection and copy value of each Lon (e.g. 120.104825) and Lat (e.g. 15.885421) corners from the metadata file. Paste it inside the XRef and YRef column respectively of the "GCP Tool" dialog box.



ent #	Point ID		> Color	XInput	YInput >	X Ref.	Y Ref.	Туре	XResidual	Y Residual	RMS Error	Contrib	Match	
1	GCP #1	- 1	1	120.106	15.883	120.105	15.885	Control	0.000	-0.000	0.000	0.345		
2	GCP #2		1	120.749	15.729	120.752	15.730	Control	-0.000	0.000	0.000	1.525		
3	GCP #3		1	120.617	15.205	120.618	15.202	Control	-0.000	0.000	0.000		,	
4	GCP #4		1	119.976	15.358	119.973	15.356	Control	0.000	0.000	0.000	1.246		
5	GCP #5		8	/	5			Control			V			

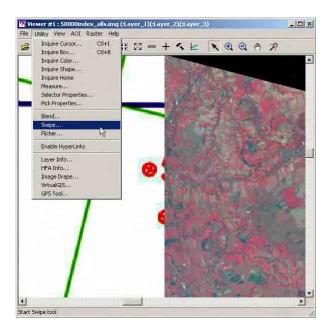
8.17 Using the window explorer, navigate thru the directory and access "WGS84.txt" file which contains coordinates of the GCP's.



8.18 Open "WGS84.txt" with notepad.

We Use         Useria         Yeen         Yeen	wall-late Soleped		
<pre>44 178871.00 2871.00 2010.01 23.0 0 47 178720.00 281035.01 44.0 47 178720.00 281035.01 44.0 47 178720.00 281035.01 43.0 47 178720.00 281035.01 43.0 47 178720.00 281035.01 43.0 47 1000.01 281035.01 43.0 47 0 47 178720.00 281035.01 43.0 47 0 47 0 47 178720.00 281035.01 43.0 47 0 47 0 47 0 47 0 47 0 47 0 47 0 47</pre>		(Tarras)	
	$\begin{array}{c} 44 & 1.7987762 & 26777962 \\ 45 & 1.7887762 & 26771962 \\ 47 & 1.7817663 & 21.03841 \\ 48 & 1.7817663 & 21.03841 \\ 48 & 1.7817663 & 21.03841 \\ 48 & 1.7817663 & 21.03841 \\ 48 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 21.03941 \\ 41 & 1.7916078 & 20.01941 \\ 41 & 1.7916078 & 20.01918 \\ 41 & 1.79175078 & 20.01950 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.01991 \\ 41 & 1.7716078 & 20.$	21.6 4.0 4.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10	
	1		

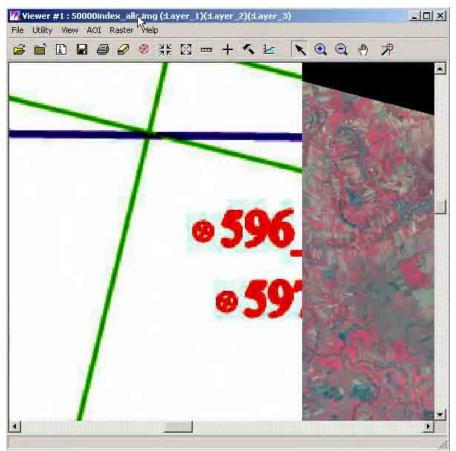
8.19 Set active viewer #1 where images of index file and satellite are shown. Click "Utility" and select "Swipe".



8.20 A "Viewer Swipe" dialog box will appear. Adjust swipe handle to view the number of the GCP which is being covered by the satellite image.

🧏 Viewer Swipe	×
Swipe Position	
69 🕀 0	100
Direction:	Automatic Swipe:
	☐ Auto Mode Speed: 300 ÷
Movie	
	Image Name 📃
1 50000index_alls.img 2 import-multi228.img	1
in the state state	
N N	· 10 17 ±
Cancel	Help

8.21 The GCP number (e.g. 596) can be seen after adjusting the swipe.



8.22

Click "Tools" in the Erdas main menu bar. Select "Coordinate Calculator...".



8.23 A "Coordinate Calculator..." dialog box will appear. Click ""Projection". Select "Set Input Projection and Units...."

Coordin	nate Calculator: (No Output)						
File Edit	Projection Elevation Option Help						
<i>🖨</i> 🗋	Clear Input Projection and Units Set Input Projection and Units	Input: Output:	(Undefined) _(Undefined)				
Bow	Clear Output Projection and Units Set Output Projection and Units			utY	Input Z	Output X	
							*
Setup the In	nput Projection and Units						1.

8.24 A "Input Projection and Units Setup" dialog box will appear. Click "Set Input Projection".

	Current Input Projecti	on:
<b>Projection.</b> Spheroid, Zorie Numbe Datum	Unknown	
Map Units	Set Input Projection	Help

8.25 A "Projection Chooser" dialog box will appear. Click the "Custom" tab. Set "UTM" in "Projection", "Clarke 1866" in "Spheroid Name", "Luzon" in "Datum Name", "51" in "UTM Zone", and "North" in "North or South". Then click "OK".

Projection Type UTM		т <u>ок</u>
Spheroid Name:	Clarke 1866	Save
) atum Name:	Luzon	Delete
JTM Zone:	51	Rename
IORTH or SOUTH:	North	Cancel
		Help
		FTT

8.26 The parameters of the Current input Projection" will be reflected in the "Input Projection and Units Setup" dialog box. Click "OK".

🥂 Input Pr	ojection	and Units	Setup	×
	Currer	nt Input Proje	ection:	
Projection:	UTM			Π
Spheroid:	Clarke 18	366		
Zone Numbe Datum; Lu	r. 51 Izon			
	Set I	nput Projecti	on	
Map Units	Ме	ters		•
OK		Cancel	Help	

8.27 Click "Projection" and select "Set Output Projection and Units".

77 Coordia	nate Calculator: (No Output)					
File Edit	Projection Elevation Option Help					
🔗 D	Clear Input Projection and Units Set Input Projection and Units	Input: Output:	UTM/Luzon/meters Ele (Undefined) ElevationInf			
Row	Clear Output Projection and Units	ut X	Input Y	Input Z	Output X	<u> </u>
	Set Output Projection and Units	- <del>N</del>				
						•
2						<u> </u>
Setup the C	Output Projection and Units					- Je

8.28 A "Output Projection and Units Setup" dialog box will appear. Click "Set Output Projection".

% Output F	Projection and Units Current Output Project	
Projection: Spheroid Zone Numbe Datum	Unknown.	
	Set Output Projectio	n
Map Units	Meters	
0K	Cancel	Help

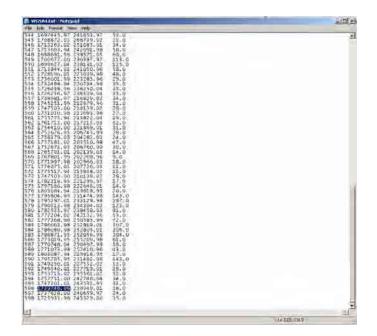
8.29 A "Projection Chooser" dialog box will appear. In the "Standard" tab, Set "Geographic" in "Categories" and "Lat/Lon [Clarke 1866] in "Projection'. Then click "OK".

7 Projection Chooser	×
Standard Custom	1
Categories Geographic	
Projection [Lat/Lon (Clarke 1955) Lat/Lon (WGS 84)	Cancel Help

8.30 The parameters of the "Current Output Projection" will be reflected in the "Output Projection and Units Setup" dialog box. Click "OK".

🧖 Output Proje	ction and Units 9	ietup 🗙
Cu	rrent Output Project	ion
Projection: Ge	ographic (Lat/Lon)	
Spheroid: Clark	e 1866	
Zone Number💫		
Datum: Clarke	1866	
<u> </u> S	et Output Projection	<u>1</u>
Map Units:	Degrees	
ОК	Cancel	Help

8.31 Copy X and Y coordinates of the GCP number (e.g. 596) from the WGS84.txt file.



8.32 Paste the X and Y coordinates of the GCP (e.g. 596) in the Input X and Input Y column respectively of the "Coordinate Calculator". The resulting Output X and Output Y will be reflected in each column.

		XY XY Input: Outpu	UTM/Luzon/meters it:_Geographic (Lat/Lon)/Cla	rke 1866/degrees		
Row	Coordinate Name	Input X	Input Y	Output X	Output Y	
1		239949.01000	1739746.96 T	120.574824	15.7231	38
2 [			2 ×	G		

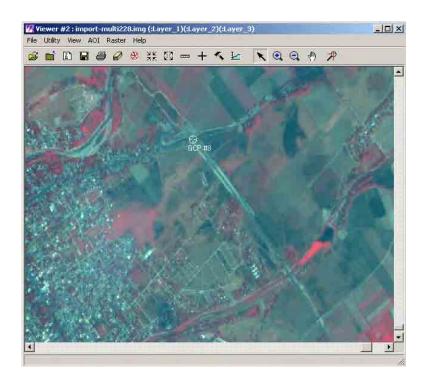
8.33 Copy Output X and Output Y coordinates of the GCP number (e.g. 596) from the "Coordinate Calculator".

<b>s</b> D	Σ 🗿 🖻 🛍 🛛 ΧΥ	Y Input: UT Output: Ger	M/Luzon/meters ographic (Lat/Lon)/Clarke *	1866/degrees	
Row	Coordinate Name	InputX	Input Y	Quint21	Citylena IV.
		239949.010000	1739746.960000	120.574824	15.723138
		n	and the second se	а 	

8.34 Paste Output X and Output Y coordinates of the GCP number (e.g. 596) from the "Coordinate Calculator" to the X Ref and Y Ref column respectively of the "GCP Tool" dialog box.

Đ	Σ Σ3 🗹	X	9 în	1 🕷 🍂 Z	Control Point E	nor: (X) 0.0000 (Y)	0.0000 (Total) 0.0	000					
int.#	Point ID		> Color	× Input	Y İnput >	STOUL	V100	Туре	X Residual	Y Residual	RMS Error	Contrib.	Match
1	GCP #1		- T	120.106	15.883	120.105	15.885	Control	0.000	-0.000	0.000	0.345	
2	GCP #2			120.749	15.729	120,752	15.730	Control	-0.000	0.000	0.000	1.525	
3	GCP #3			120.617	15.205	120.618	15.202	Control	-0.000	0.000	0.000	0.042	
4	GCP #4			119.976	15.358	119.973	15.356	Control	0.000	0.000	0.000	1.246	
5	GCP #5			120.578	15.721	120.580	15.722	Control				-	
	GCP #6		>			120.575	15.723	Control					
7	GCP #7	_	· · · · · · · · · · · · · · · · · · ·		>		1	Control					

8.35 The GCP will be reflected on the image.



8.36 Repeat steps 8-31 to 8-34 until enough GCP's have been measured. Click "Solve Geometric Model with Control Points" icon and check RMS Error result if acceptable.

Q :	5 20 E	X	Θ	๊ต	🐜 🚿 Z	20 Control Point E	rror: (X) 0.0017 (Y)	0.0009 (Total) 0.0	019						
oint #	Point ID		>	Color	Xinput	Y Input >	2000	- NA# []	Type	×Residual	Y Residual	RMS Error	Contrib.	Match	
1	GCP #1		TT		120.106	15.883	120.105	15.885	Control	0.001	0.000	0.001	0.542		
2	GCP #2				120.749	15.729	120.752	15.730	Control	0.002	-0.000	0.002	1.075		
3	GCP #3				120.617	15.205	120,618	15.202	Control	0.001	-0.001	0.002	0.812		
4	GCP #4				119.976	15.358	119.973	15.356	Control	-0.000	-0.000	0.000	0.247		
5	GCP #5				120.578	15.721	120.575	15.722	Control	-0.003	-0.000	0.003	1.707		
	GCP #8				120.589	15.224	128.588	15.223	Control	-0.001	0.002	0.002	0.956		
7	GCP #6		>			X			Control						
	GCP #6		>			>.			Control						

8.37 Click "Display Resample Image Dialog" icon.



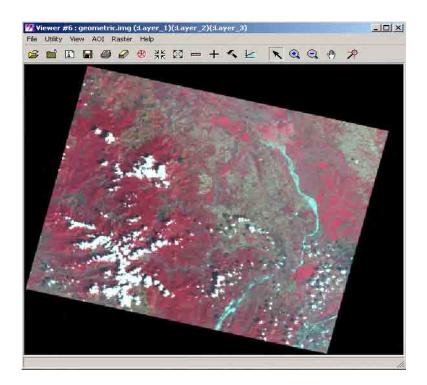
8.38 A "Resample" dialog box will appear. Click "Resample Output File" button.

	Output File: (*.img)		Resample Method:
4	6	Neare:	st Neighbor 📃
	Outpu	it Map Informa	ition:
Projecti	on: Geographic (I	Lat/Lon)	
Units:	degrees		
Number	rows 24000	Numbe	r columns: 27302
-	0	utput Corners	
ULX:	119.969794	LRX:	120.752362
ULY:	15.887512	ERY:	15.199594
			From Inquire Box
	Οι	itput Cell Size	\$10
×: 0.0	000029 🕂 Y:	0.000029	Nominal
Re	ecalculate Output Defau	ilts	🗖 Ignore Zero in Stats.
	UK Batch	- N =	ancel Help

8.39 An "Output File" dialog box will appear. Browse and locate the folder of the Output image file. Type the output file name (e.g. geometric.img) in the "File name" box. Then click "OK".

Oglopodaseniap       Tenip       Tenip	386FS	import d	beck_classified.	OK
erdas_imagine9.1       training_manual       Inatural-spot.img       Help         image       VR1       pansharpen.img       Help         jica       20060228multi.img       spot-multi.img         jica_final       228multi.img       spot.img       Recent         MS0Cache       519multi.img       spot_pan.img       Goto         music       5341.img       spot_pansharpe       Goto	그 아이는 것 같은 것 같은 것이 ?			Cancel
] jica_final ∰ 228multi.mg ∰ spot.mg MSOCache ∰ 519multi.mg ∰ spot_pan.img music ∰ 5341.img ∰ spot_pansharpe Goto	erdas_imagine9.1	📴 training_manual 🛛 🕹	natural-spot.img	Help
MSOCache 🔄 519multi.img 🔄 spot_pan.img music 🔄 5341.img 🔄 spot_pan.sharpe Goto	ALC: NUMBER OF ALC: NOT A		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
nusic 🛃 5341.img 🛃 spot_pansharp∈ Goto				Recent.
BECYCLEB #15342 ima #1spot vs ima		🛃 5341.img	국민원의 전 성관심 :	Goto
	RECYCLER	🛃 5342.img	spot_xs.img	

8.40 The system will process the data. Click "OK" when done. Open a viewer. Navigate thru the directory, select and open the resampled file (e.g. geometric.img). The image will be shown in the viewer window.



## 9. Adding New Datum

ERDAS IMAGINE comes with an extensive library of built-in projections, spheroids, and datums. Every effort is made to include as many projection systems as possible. Frequently we are asked to add a new projection system to our library.

IMAGINE provides a mechanism for adding new spheroids and datums into the Projection Chooser. IMAGINE allows you to save specific sets of parameters to the menu system for future access.

## Overview

of Adding set spheroids and/or datums is simple. The file а new <IMAGINE HOME>/etc/spheroid.tab is read by the IMAGINE Projections Chooser to provide all the necessary parameters for defining spheroids and datums. You can access this file by going to **Tools > Edit Text Files...** from the main menu, and typing in the name of the file in the Text Editor dialog or you can just access the "spheroid.tab" in the explorer and edit it using notepad.

The ellipsoidal datums are recorded in terms of the seven parameters required to calculate a shift to the WGS84 datum.

"Datum Name" [PARAMETRIC] dx dy dz rw rj rk ds [DESCRIPTION = string] Where:

dx, dy and dz are the x,y,z translations to WGS84, in meters,

 $f(\omega)$  (or rw),  $f\phi$  (or rj), and  $f\kappa$  (or rk) are the omega, phi, kappa rotations to WGS84, in radians and scientific notation,

and, **ds** is the scale change to WGS84 in scientific notation.

9.1 Using the window explorer, navigate thru the directory and access "spheroid.tab" file which contains parameters spheroid and datum settings.

	s Help			
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ddress อ C;\Program Files\Leica Geo	osystems\Geospatial Imaging 9.1\etc			× 🛃 Go
olders	× Name	Size	Туре	Date Modified
🗄 🧰 Program Files	👔 🔤 leica_geosystems_logo	kimg 383 KB	IMG File	7/7/2006 9:00 AM
E C Adobe	🗐 malinheadroi.bin	1,693 KB	BIN File	7/7/2006 9:13 AM
E C ArcGIS	mapprojections.dat	18 KB	DAT File	8/17/2006 12:11 AM
E ASUS	May76v20.gsb	11,726 KB	GSB File	7/7/2006 9:13 AM
E D AutoCAD Map 3D 2008	🖬 misc. sml	50 KB	SML File	7/7/2006 9:13 AM
E Autodesk	modis_36band.saf	2 KB	SAF File	7/7/2006 9:12 AM
E BAE SYSTEMS	modis_reflective-7.saf	1 KB	SAF File	7/7/2006 9:12 AM
E Common Files	modis_reflective.saf	1 KB	SAF File	7/7/2006 9:12 AM
ComPlus Applications	modis_thermal-16,saf	1 KB	SAF File	7/7/2006 9:12 AM
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E DIFX	mti-infrared.saf	1 KB	SAF File	7/7/2006 9:12 AM
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🔄 icons E 🛅 imagizer_cd	SPOT4Pan.saf		SAF File	7/7/2006 9:13 AM

9.2 Copy original "spheroid .tab" file to another folder. Open "spheroid.tab" using notepad. Add new row data and type parameters for PRS92 settings based on the datum parameters ("Datum Name" [PARAMETRIC] dx dy dz rw rj rk ds) of the system.

"Datum Name" dx dy dz rw rj rk ds "PRS92" -127.62195 -67.24478 -47.04305 3.06762 -4.90291 -1.57790 -1.06002

<pre>6 Edt Format Vew Heb</pre>	spheroi le Edit	and the second	10.000	9492A		-	_	-	2	-			, de
GRIDBASEDATUM = "FROMDATUM" ) DESCRIPTION="From AD27 grid nadcon.dat" "MAD27 (CONUS)" -9.180_170_0_0_0_0 "MAD27 (Alextian %) -9.135_172_0_0_0_0 "MAD27 (Alextian %) -2.132_172_0_0_0_0 "MAD27 (Alextian %) -2.132_149_0_0_0_0 /* Aleutian Islands east of 180 deg. */ "MAD27 (Sansajvador Island)" 1_140_165_0_0_0_0 "MAD27 (Gandan) -1.0158_187_0_0_0_0 "MAD27 (Canada) -1.0158_187_0_0_0_0 "MAD27 (Canada) (NTV2)" SURFACE BASEDATUM="NAD27 (Canada)" { fastr RESAMPLE = "Bilinear" LATITUDE = "NTV2_0.GSB" LONGTIDDE = "NTV2_0.GSB" LONGTIDDE = "NTV2_0.GSB" Canada, (NTV2)" SURFACE BASEDATUM="NAD27 (Canada)" fastr RESAMPLE = "Bilinear" LATITUDE = "NTV2_0.GSB" Canada, AB) -7_162_188_0_0_0 "MAD27 (Canada_AB) -7_162_188_0_0_0 "MAD27 (Canada_AB) -7_121_184_0_0_0 "MAD27 (Canada_AB) -7_121_184_0_0_0 "MAD27 (Canada_MNQ)" -22_160_190_0_0_0 "MAD27 (Canada_MNQ)" -22_160_190_0_0 "MAD27 (Canada_MNQ)" -22_160_190_0_0_0 "MAD27 (Canada_NNQ)" -21_61_180_0_0_0 "MAD27 (Cuba-2)" -3_12_180_0_0_0 "MAD27 (Cuba-2)" -3_12_180_0_0_0_0 "MAD27 (Alaska) (MED Geoid" SURFACE /* BASEDATUM='Clarka_1866', It is defailt to spheroid	io Luic	Tormoc	New 1	1	IDE = "nad	con. dat	ii		1.0				
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<pre>"MAD27 (East CONUS)" -= 0 161 179 0 0 0 0 "MAD27 (Alaextian K)" -= 152 172 0 0 0 0 "MAD27 (Alaextian K)" -2 152 149 0 0 0 0 /* Alaevtian Islands east of 180 deg. */ "MAD27 (Alaevtian K)" -2 152 149 0 0 0 0 /* Alaevtian Islands west of 180 deg. */ "MAD27 (Bahamas)" -4 154 178 0 0 0 0 /* Alaevtian Islands west of 180 deg. */ "MAD27 (Canada) (MTV2)" SUFACE BASEDATUM="MAD27 (Canada)" { RASTER RESAMPLE = "Bilinear" LATITUDE = "NTV2_0.GSB" GOIDBASEDATUM = "RCMOMATUM" DESCRIPTION="Natural Resources Canada, Geodetic Survey Division" "MAD27 (Canada_M)" - 7 162 188 0 0 0 0 "MAD27 (Canada_M)" - 7 162 188 0 0 0 0 "MAD27 (Canada_M)" - 7 163 188 0 0 0 0 "MAD27 (Canada_M)" - 7 162 188 0 0 0 0 "MAD27 (Canada_M)" - 7 163 188 0 0 0 0 "MAD27 (Canada_M)" - 7 163 188 0 0 0 0 "MAD27 (Canada_M)" - 125 128 0 0 0 0 "MAD27 (Cuba" - 3) 139 188 0 0 0 0 "MAD27 (Cuba" - 3) 152 740 0 0 0 "MAD27 (Cuba" - 3) 127 740 0 0 0 "MAD27 (Cuba" - 3) 127 740 0 0 0 "MAD27 (Cuba" - 3) 127 740 0 0 0 "MAD27 (Alaexia) (MRE) Geold" SURFACE /* BASEDATUM=-[Take1866", Tt is default to Spheroid</pre>		"NAD3	7 (00	DESCRIPTION=	From NAD2	/ grid i	nadcon.	dat"					
<pre>"AAD27 (Alaska)" -5 135 172 0 0 0 0  /* Aleutian Islands east of 180 deg. */ "AAD27 (Aleutian W)" 2 204 105 0 0 0 0  /* Aleutian Islands west of 180 deg. */ "AAD27 (San Salvador Island)" 1 140 165 0 0 0 0 "NAD27 (San Salvador Island)" 1 140 165 0 0 0 0 "NAD27 (Canada)" -4 154 178 0 0 0 0 "NAD27 (Canada)" -10 158 187 0 0 0 0 "NAD27 (Canada)" -10 158 187 0 0 0 0 "NAD27 (Canada)" (*/ RASTER RESAMPLE = "Bilinear" LATTUDE = "NTV2_0.GSB" GRIDBASEDATUM = "FROMDATUM" } DESCRIFTION="Natural Resources Canada, Geodetic Survey Division" "NAD27 (Canada_MO)" -9 157 184 0 0 0 0 "NAD27 (Canada_MO)" -9 157 184 0 0 0 0 "NAD27 (Canada_MO)" -9 157 184 0 0 0 0 "NAD27 (Canada_MO)" -9 157 184 0 0 0 0 "NAD27 (Canada_MO)" -9 157 184 0 0 0 0 "NAD27 (Canada_MO)" -9 152 128 0 0 0 0 "NAD27 (Canada_MO)" -9 152 128 0 0 0 0 "NAD27 (Canada_MO)" -9 152 128 0 0 0 0 "NAD27 (Cuba-2)" -142 138 0 0 0 0 "NAD27 (Cuba-2)" -142 138 0 0 0 0 "NAD27 (Cuba-2)" -142 130 0 0 0 0 "NAD27 (Cuba-2)" -142 130 0 0 0 0 "NAD27 (Cuba-2)" -142 130 0 0 0 0 "NAD27 (Cuba-2)" -12 130 190 0 0 0 0 "NAD27 (Cuba-2)" -12 130 190 0 0 0 0 "NAD27 (Cuba-2)" -12 130 190 0 0 0 0 "NAD27 (Cuba-2)" -12 130 190 0 0 0 0 "NAD27 (Cuba-2)" -12 130 190 0 0 0 0 "NAD27 (Cuba-2)" -12 130 190 0 0 0 0 "NAD27 (Cuba-2)" -12 130 190 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -170 0 0 0 "Old Hawaiian (Maui)" 65 -290 -170 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -170 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -170 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -170 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -170 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -170 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -170 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -170 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -120 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -120 0 0 0 "Old Hawaiian (Maui)" 65 -290 -120 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -120 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -120 0 0 0 "Old Hawaiian (Maui)" 65 -290 -120 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -120 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -120 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -120 0 0 0 0 "</pre>		"NADZ	7 (Ea	st CONUS)" -9	161 179	0 0 0 0							
<pre>"MAD27 (Aleutian E)" -2 152 149 0 0 0 /* Aleutian Islands east of 180 deg. */ "MAD27 (Calautian W) 2 204 105 0 0 0 /* Aleutian Islands west of 180 deg. */ "MAD27 (Canada)" -4 154 178 0 0 0 0 "MAD27 (Canada)" -10 158 187 0 0 0 0 "MAD27 (Canada)" -10 158 187 0 0 0 0 "MAD27 (Canada) (NTV2)" SURFACE BASEDATUM="NAD27 (Canada)"</pre>		"NADZ	7 (We	st CONUS)" -8	159 175	0000							
<pre>"HAD27 (Eshamas)" -4 154 178 0 0 0 0 "HAD27 (San Salvador ISland)" 1 140 165 0 0 0 0 "HAD27 (Canada) (NTV2)" SURFACE BASEDATUM="NAD27 (Canada)"</pre>		"NAD2	7 (A) 7 (A)	askaj -5 13: eutian E)" -7	152 149	0000		/M Aleu	tian T	slands	east of	180 dea.	4/
<pre>"NA027 (San Salvador ISland)" 1.140.165 0 0 0 0 "NA083 (Canada) (NTV2)" SURFACE BASEDATUM="NAD27 (Canada)" {     RASTER RESAMPLE = "Bilinear"     LATITUDE = "NTV2_0.GSB"     GRIDBASEDATUM = "FROMDATUM"     J DESCRIPTION="NATURal RESOURCES Canada, Geodetic Survey Division"     NA027 (Canada_AB)" -7 162 188 0 0 0 0 "NA027 (Canada_MO)" -9 157 184 0 0 0 0 "NA027 (Canada_MNO)" -2 160 190 0 0 0 0 "NA027 (Canada_NNO)" -2 160 190 0 0 0 0 "NA027 (Canada_NNO)" -2 160 190 0 0 0 0 "NA027 (Canada_NNO)" -2 160 190 0 0 0 0 "NA027 (Canada_NNO)" -2 160 190 0 0 0 0 "NA027 (Canada_NNO)" -2 160 190 0 0 0 0 "NA027 (Canada_NNO)" -2 160 190 0 0 0 0 "NA027 (Canada_NNO)" -2 160 190 0 0 0 0 "NA027 (Canada_NNO)" -2 120 125 194 0 0 0 0 "NA027 (Canada_NNO)" -2 120 125 194 0 0 0 0 "NA027 (Canada_NNO)" -2 120 125 194 0 0 0 0 "NA027 (Canada_NNO)" -2 127 8 0 0 0 0 "NA027 (Cuba_2)" -4 135 1.4 181.9 0 0 0 0 "NA027 (Cuba_2)" -4 135 1.4 181.9 0 0 0 0 "NA027 (Cuba_2)" -4 135 1.4 181.9 0 0 0 0 "NA027 (Cuba_2)" -4 135 1.4 181.9 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Greenland)" 16 -289 -190 0 0 0 0 "NA027 (Greenland)" 16 -289 -190 0 0 0 0 "NA027 (Mexico)" -4 2 135 4 183.9 0 0 0 0 "Old Hawaiian (Hawaii)" 65 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 65 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 65 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 65 -290 -190 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Hawaii)"</pre>		"NADZ	7 (A]	eutian W)" 2	204 105 0	000		/* Aleu	tian I	slands	west of	180 deg.	4/
<pre>"NAD27 (Canada)" -10 158 187 0 0 0 0 "NAD83 (Canada) (NTV2)" SURFACE BASEDATUM="NAD27 (Canada)" {     RASTER RESAMPLE = "Bilinear"     LONGTUDE = "NTV2_0.GSB"     LONGTUDE = "NTV2_0.GSB"     LONGTUDE = "NTV2_0.GSB"     LONGTUDE = "TNTV2_0.GSB"     LONGTUDE = "TATV2_0.GSB"     LONGTUDE = "TATV2_0.GSB"     LONGTUDE = "TTATV2_0.GSB"     LONGTUDE = "TTATVE."     LONGTUDE = "TT</pre>		"NADZ	17 (Ba 17 (Sa	hamas)" -4 19 n Salvador Is	4 178 0 0 land)" 1	00	0 0 0	0					
<pre>{     AstER RESAMPLE = "Bilinear"     LATITUDE = "NTV2_0.GSB"     GRIDEASEDATUM = "FROMDATUM"     DESCRIPTION="Natural Resources Canada, Geodetic Survey Division"     NAD27 (Canada_AD) - 9 152 188 0 0 0 0     "NAD27 (Canada_MO)" -9 157 184 0 0 0 0     "NAD27 (Canada_MO)" -9 157 184 0 0 0 0     "NAD27 (Canada_MO)" -7 139 181 0 0 0 0     "NAD27 (Canada_MS)" 4 159 188 0 0 0 0     "NAD27 (Canada_MS)" 4 159 188 0 0 0 0     "NAD27 (Canada_MS)" 4 159 188 0 0 0 0     "NAD27 (Canada_MS)" 4 159 188 0 0 0 0     "NAD27 (Canada_MS)" 4 159 188 0 0 0 0     "NAD27 (Canada_MS)" 4 159 188 0 0 0 0     "NAD27 (Canada_MS)" 4 159 188 0 0 0 0     "NAD27 (Canada_MS)" 4 159 188 0 0 0 0     "NAD27 (Canada_MS)" 4 159 188 0 0 0 0     "NAD27 (Cuba-)" -42 125 201 0 0 0 0     "NAD27 (Cuba-)" -42 135 149 0 0 0 0     "NAD27 (Cuba-)" -42 135 148 0 0 0 0     "NAD27 (Cuba-)" -42 135 148 0 0 0 0     "NAD27 (Cuba-)" -42 130 190 0 0 0 0     "NAD27 (Green]and)" 11 11 195 0 0 0 0     "NAD27 (Green]and)" 11 11 195 0 0 0 0     "NAD27 (Green]and)" 11 11 195 0 0 0 0     "Old Hawaiian (Hawaii)" 85 -290 -192 0 0 0 0     "Old Hawaiian (Hawaii)" 85 -290 -192 0 0 0 0     "Old Hawaiian (Hawaii)" 85 -290 -192 0 0 0 0     "Old Hawaiian (Hawaii)" 85 -290 -192 0 0 0 0     "Old Hawaiian (Hawaii)" 85 -290 -192 0 0 0 0     "Old Hawaiian (Hawaii)" 85 -290 -192 0 0 0 0     "Old Hawaiian (Hawaii)" 85 -290 -192 0 0 0 0     "Old Hawaiian (Hawaii)" 85 -290 -192 0 0 0 0     "Old Hawaiian (Hawaii)" 85 -290 -192 0 0 0 0     "Detro Rico" 17 2-101 0 0 0 0     "Detro Rico" 17 2-101 0 0 0 0     "PES92" =127,62195 -67,24478 -47,04305 3.06762 -4,90291 -1,57790 -1,06002     "NAD27 (Alaska) (MRE) Geold SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid     {         REGRESSION -90 0 90 360  /* this the bounding box in latitude longitude in decime</pre>		"NADZ	7 (Ca	nada)" -10 15	8 187 0 0	00	5 5 5	ň					
LATITUDE = "NTV2_0.GSB" LONGITUDE = "NTV2_0.GSB" GRIDBASEDATUM = "FROMDATUM" } DESCRIPTION="Natural Resources Canada, Geodetic Survey Division" "NAD27 (Canada_AD) 0 157 184 0 0 0 0 "NAD27 (Canada_NNNQ)" -22 160 190 0 0 0 "NAD27 (Canada_NNNQ)" -22 160 190 0 0 0 "NAD27 (Canada_NNNQ)" -22 160 190 0 0 0 "NAD27 (Canada_NNNQ)" -21 188 0 0 0 0 "NAD27 (Canada_NNNQ)" -19 188 0 0 0 0 "NAD27 (Canal Zone)" 0 125 194 0 0 0 0 "NAD27 (Cubar)" - 153 178 0 0 0 0 "NAD27 (Cubar)" - 152 218 0 0 0 0 "NAD27 (Cubar)" - 152 218 0 0 0 0 "NAD27 (Cubar)" - 12 130 190 0 0 0 0 "NAD27 (Greenland)" 11 114 195 0 0 0 0 "NAD27 (Greenland)" 11 114 195 0 0 0 0 "NAD27 (Greenland)" 11 114 195 0 0 0 0 "NAD27 (Greenland)" 15 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Maui)" 55 -290 -190 0 0 0 0 "Old Hawaiian (Maui)" 56 -290 -190 0 0 0 "Old Hawaiian (Maui)" 45 -290 -190 0 0 0 "Old Hawaiian (Maui)" 45 -290 -190 0 0 0 "Old Hawaiian (Maui)" 56 -290 -190 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -190 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai		"NAD8	33 (Ça	nada) (NTv2)'	SURFACE	BASEDAT	UM="NAD	27 (Cana	da)"				
LATITUDE = "NTV2_0.GSB" LONGITUDE = "NTV2_0.GSB" GRIDBASEDATUM = "FROMDATUM" } DESCRIPTION="Natural Resources Canada, Geodetic Survey Division" "NAD27 (Canada_AD) 0 157 184 0 0 0 0 "NAD27 (Canada_NNNQ)" -22 160 190 0 0 0 "NAD27 (Canada_NNNQ)" -22 160 190 0 0 0 "NAD27 (Canada_NNNQ)" -22 160 190 0 0 0 "NAD27 (Canada_NNNQ)" -21 188 0 0 0 0 "NAD27 (Canada_NNNQ)" -19 188 0 0 0 0 "NAD27 (Canal Zone)" 0 125 194 0 0 0 0 "NAD27 (Cubar)" - 153 178 0 0 0 0 "NAD27 (Cubar)" - 152 218 0 0 0 0 "NAD27 (Cubar)" - 152 218 0 0 0 0 "NAD27 (Cubar)" - 12 130 190 0 0 0 0 "NAD27 (Greenland)" 11 114 195 0 0 0 0 "NAD27 (Greenland)" 11 114 195 0 0 0 0 "NAD27 (Greenland)" 11 114 195 0 0 0 0 "NAD27 (Greenland)" 15 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Maui)" 55 -290 -190 0 0 0 0 "Old Hawaiian (Maui)" 56 -290 -190 0 0 0 "Old Hawaiian (Maui)" 45 -290 -190 0 0 0 "Old Hawaiian (Maui)" 45 -290 -190 0 0 0 "Old Hawaiian (Maui)" 56 -290 -190 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -190 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai			۱ RA	STER RESAMPLE	= "Bilin	ear"							
GRIDBASEDATUM = "FROMDATUM" } DESCRIPTION="NAUTURAL Resources Canada, Geodetic Survey Division" "NAD27 (Canada_AB)" -7 162 188 0 0 0 0 "NAD27 (Canada_NNO)" -2 137 184 0 0 0 0 "NAD27 (Canada_NNO)" -2 126 0 190 0 0 0 "NAD27 (Canada_NNO)" -7 139 181 0 0 0 0 "NAD27 (West Central America)" -3 142 183 0 0 0 0 "NAD27 (West Central America)" -3 142 183 0 0 0 0 "NAD27 (Cuba)" -9 152 178 0 0 0 0 "NAD27 (Cuba)" -12 130 190 0 0 0 0 "NAD27 (Greenland)" 11 11 4195 0 0 0 0 "NAD27 (Greenland)" 11 11 4195 0 0 0 0 "NAD27 (Mexico)" -12 130 190 0 0 0 0 "Old Hawaiian (Hawaii)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Maui)" 58 -283 -182 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "RAD27 (Alaska) (MRE) Geoid" SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid { REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decime 0.104719750 -6.452624500 0.104719750 -21.7817 /* this A B C D, V = A*V + B, U = C*U + D, v is longitude LATITUDE={} /* nothing for latitude regression surface, CAN BE OM HEIGHT = { /* The first item for V exponent, second item for U exponent, and 0 1 12.556 /* 12.556 x VAO x UA1 i.e. 1 0 8.438 0 2 3.742 1 1 1 19.8966 2 0 4.249 0 3 -12.714				LATITUE	E = "NTV2	_0.GSB"	W.						
<pre>bESCRIPTION="Natural Resources Canada, Geodetic Survey Division" "MAD27 (canada_AB)" -7 162 188 0 0 0 0 "NAD27 (canada_NN)" -15 184 0 0 0 0 "NAD27 (canada_NN)" -15 188 0 0 0 0 "NAD27 (canada_NN)" -15 188 0 0 0 0 "NAD27 (canada_NN)" -7 139 181 0 0 0 0 "NAD27 (canada_NN)" -7 139 181 0 0 0 0 "NAD27 (canada_Central America]" -3 142 183 0 0 0 0 "NAD27 (canal Zone)" 0 125 201 0 0 0 0 "NAD27 (canal Zone)" 0 125 201 0 0 0 0 "NAD27 (canal Zone)" 0 125 201 0 0 0 0 "NAD27 (cuba)" -9 132 178 0 0 0 "NAD27 (cuba)" -9 132 178 0 0 0 "NAD27 (cuba)" -9 132 178 0 0 0 0 "NAD27 (cuba)" -9 132 178 0 0 0 0 "NAD27 (cuba)" -9 132 178 0 0 0 0 "NAD27 (cuba)" -9 132 178 0 0 0 0 "NAD27 (cuba)" -9 121 20 190 0 0 0 "NAD27 (cuba)" -9 121 20 190 0 0 0 "NAD27 (mexico)" -12 130 190 0 0 0 0 "NAD27 (mexico)" -12 130 190 0 0 0 0 "Old Hawaiian (Havaii)" 89 -279 -183 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -172 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -190 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -190 0 0 0 0 "Old Hawaiian (Maui)" 58 -283 -182 0 0 0 "PR592" -127, 62195 -67, 24478 -47, 04305 3, 06762 -4, 90291 -1, 57790 -1, 06002 "NAD27 (Alaska) (MRE) Geoid" SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid (</pre>				GRIDBAS	EDATUM =	"FROMDA	TUM"						
<pre>"NA027 (Canada_NNNO)" -22 160 190 0 0 0 0 "NA027 (Canada_NS)" 4 159 188 0 0 0 "NA027 (Yukon)" -7 139 181 0 0 0 0 "NA027 (East Central America)" 0 125 194 0 0 0 0 "NA027 (Cuba] -0 125 201 0 0 0 "NA027 (Cuba] -0 125 201 0 0 0 "NA027 (Cuba] -0 125 213 0 0 0 0 "NA027 (Cuba] -0 125 213 0 0 0 0 "NA027 (Cuba] -0 125 213 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Cahu)" 58 -283 -182 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "Pressy2" -127.62195 -67.24478 -47.04305 3.06762 -4.90291 -1.57790 -1.06002 "NA027 (Alaska) (MRE) Geold" SUFFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid {     REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decima</pre>		460.22	_ }	DESCRIPTION=	Natural R	esource	s Canad	a, Geode	tic su	rvey D	ivision"		
<pre>"NAD27 (Canada_NNNO)" -22 160 190 0 0 0 0 "NAD27 (Canada_NS)" 4 159 188 0 0 0 "NAD27 (Fast Central America)" -3 142 183 0 0 0 0 "NAD27 (East Central America)" 0 125 194 0 0 0 0 "NAD27 (Cuba] -0 125 201 0 0 0 0 "NAD27 (Cuba] -0 125 201 0 0 0 0 "NAD27 (Cuba] -0 125 201 0 0 0 0 "NAD27 (Cuba] -0 125 201 0 0 0 0 "NAD27 (Cuba] -0 125 201 0 0 0 0 "NAD27 (Greenlad)" 11 114 195 0 0 0 0 "NAD27 (Greenlad)" 11 114 195 0 0 0 0 "NAD27 (Greenlad)" 11 114 195 0 0 0 0 "NAD27 (Greenlad)" 11 114 195 0 0 0 0 "NAD27 (Greenlad)" 11 114 195 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Gahu])" 58 -283 -182 0 0 0 0 "Old Hawaiian (Gahu])" 58 -283 -182 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 "PLOPTOR (Calska) (MRE) Geold" SUFFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid {     REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decima</pre>		"NAD2	17 (Ca 17 (Ca	nada_AB)" -/ nada_MO)" -9	162 188 0 157 184 0	000							
<pre>"NAD27 (Vukon)" -7 139 181 0 0 0 0 "NAD27 (East Central America)" -3 142 183 0 0 0 0 "NAD27 (Canal Zone)" 0 125 201 0 0 0 0 "NAD27 (Cuba')" -9 152 178 0 0 0 0 "NAD27 (Cuba')" -9 152 178 0 0 0 0 "NAD27 (Cuba')" -4. 135.4 181.9 0 0 0 0 "NAD27 (Greenland)" 11 114 195 0 0 0 0 "NAD27 (Mexico)" -12 130 190 0 0 0 "Old Hawaiian 61 -285 -181 0 0 0 0 "Old Hawaiian (Fauai)" 89 -279 -183 0 0 0 0 "Old Hawaiian (Fauai)" 89 -279 -183 0 0 0 0 "Old Hawaiian (Fauai)" 85 -283 -182 0 0 0 0 "Old Hawaiian (Sauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Sauai)" 58 -283 -182 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "Presented and the second secon</pre>		"NADZ	7 (Ca	nada_NNNQ)" -	22 160 19	<b>ర్ర్</b> ర్	0						
<pre>"NA027 (East Central America)" -3 142 183 0 0 0 0 "NA027 (west Central America)" 0 125 194 0 0 0 0 "NA027 (Cuba)" -9 152 178 0 0 0 0 "NA027 (Cuba-2)" -4.2 135.4 181.9 0 0 0 0 "NA027 (Greenand)" 11 14 195 0 0 0 0 "Old Hawaiian" 61 -285 -181 0 0 0 0 "Old Hawaiian (Hauai)" 89 -279 -183 0 0 0 0 "Old Hawaiian (Mauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -190 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -190 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -190 0 0 0 "Old Hawaiian (Maui)" 65 -290 -190 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "Puerto Rico" 11 72 -</pre>		"NADZ	17 (Ca	nada_NS)" 4 1 kom)" 7 120	59 188 0	000							
<pre>"NA027 (West Central America)" 0 125 194 0 0 0 0 "NA027 (Canal Zone)" 0 125 201 0 0 0 0 "NA027 (Cuba)" -9 152 178 0 0 0 0 "NA027 (Cuba)" -9 152 178 0 0 0 0 0 "NA027 (Greenland)" 11 114 195 0 0 0 0 "NA027 (Mexico)" -12 130 190 0 0 0 0 "Old Hawaijan" 61 -285 -181 0 0 0 0 "Old Hawaijan (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -190 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -190 0 0 0 0 "Old Hawaiian (Oahu)" 58 -283 -182 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "IMA027 (Alaska) (MRE) Geoid" SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid {     REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decime</pre>		"MAD T	7 (55	ct Control An	"(coting)	2 142 1	83 0 0	0 0					
<pre>"NAD27 (Cuba_2)" -4.2 135.4 181.9 0 0 0 0 "NAD27 (Cuba_2)" -4.2 135.4 181.9 0 0 0 0 "NAD27 (Greenland)" 11 114 195 0 0 0 0 "Old Hawaiian" 61 -285 -181 0 0 0 0 "Old Hawaiian (Hauai)" 89 -279 -183 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -172 0 0 0 0 "Old Hawaiian (Maui)" 65 -290 -190 0 0 0 "Old Hawaiian (Oabu)" 58 -283 -182 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "Pressor" -127.62195 -67.24478 -47.04305 3.06762 -4.90291 -1.57790 -1.06002 "NAD27 (Alaska) (MRE) Geoid" SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid { REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decima:</pre>		"NADZ	7 (We	st Central An	ierica)" O	125 19	4000	0					
NADZ/ (Mexico) -12 130 190 0 0 0 0 "Old Hawaiian (fauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -170 0 0 0 "Old Hawaiian (cahu)" 58 -283 -182 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "PES92" -127.62195 -67.24478 -47.04305 3.06762 -4.90291 -1.57790 -1.06002 "NADZ7 (Alaska) (MRE) Geoid" SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid ( REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decime 0.104719750 -6.492624500 0.104719750 -21.781 /* this A B C D, V = A*V + B, U = C*U + D, v is longitude LATITUDE={ / /* nothing for latitude regression surface, CAN BE OM HEIGHT = { /* Terms height regression result in meters the result is sum of a /* The first item for V exponent, second item for U exponent, and 0 0 1.341 /* 1.341 x VAO x UAO 1.e. 1 0 8.438 0 2 3.742 1 1 19.896 2 0 4.249 0 3 -12.714		NAD2	17 (Ca 17 (Cu	naizone) u hal" -9 152 1	125 201 0 78 0 0 0	000							
NADZ/ (Mexico) -12 130 190 0 0 0 0 "Old Hawaiian (fauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -170 0 0 0 "Old Hawaiian (cahu)" 58 -283 -182 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "PES92" -127.62195 -67.24478 -47.04305 3.06762 -4.90291 -1.57790 -1.06002 "NADZ7 (Alaska) (MRE) Geoid" SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid ( REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decime 0.104719750 -6.492624500 0.104719750 -21.781 /* this A B C D, V = A*V + B, U = C*U + D, v is longitude LATITUDE={ / /* nothing for latitude regression surface, CAN BE OM HEIGHT = { /* Terms height regression result in meters the result is sum of a /* The first item for V exponent, second item for U exponent, and 0 0 1.341 /* 1.341 x VAO x UAO 1.e. 1 0 8.438 0 2 3.742 1 1 19.896 2 0 4.249 0 3 -12.714		"NADZ	7 (Cu	ba-2)" -4.2 1	35.4 181.	9000	0						
"Old Hawaiian" 61 -285 -181 0 0 0 0 "Old Hawaiian (Hawaii)" 89 -279 -183 0 0 0 0 "Old Hawaiian (Kauai)" 45 -290 -172 0 0 0 0 "Old Hawaiian (Maui)" 55 -290 -190 0 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 "PESS2" -127.62195 -67.24478 -47.04305 3.06762 -4.90291 -1.57790 -1.06002 "NAD27 (Alaska) (MRE) Geoid SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid { REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decima 0.104719750 -6.452624500 0.104719750 -21.7817 /* this A B C D, V = A*V + B, U = C*u + D, v is longitude LATITUDE={ / /* nothing for latitude regression surface, CAN BE OM HEIGHT = { /* Terms height regression result in meters the result is sum of a /* The first item for v exponent, second item for U exponent, and 0 0 1.341 /* 1.341 x V40 x U40 i.e. 0 1 12.556 /* 12.556 x V40 x UA1 i.e. 1 0 8.458 0 2 3.742 1 1 19.896 2 0 4.249 0 3 -12.714		"NAD2 "NAD2	17 (Gr 17 (Me	eenland)" 11 vico)" -12 13	114 195 0	000							
"Old Hawaiian (Maui)" 65 -290 -190 0 0 0 0 "Old Hawaiian (Oahu)" 58 -283 -182 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "PRS92" -127.62195 -67.24478 -47.04305 3.06762 -4.90291 -1.57790 -1.06002 "NAD27 (Alaska) (MRE) Geoid" SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid { REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decime: 0.104719750 -6.492624500 0.104719750 -21.7812 /* this A B C D, V = A*V + B, U = C*u + D, v is longitude LATITUDE={ / * nothing for latitude regression surface, CAN BE LONGITUDE = { /* nothing for longitude regression surface, CAN BE ON HEIGHT = { /* Terms height regression result in meters the result is sum of : /* The first item for v exponent, second item for U exponent, and 0     0     1.341		"old	Hawai	jan" 61 -285	-181 0 0	ວັວັ							
"Old Hawaiian (Maui)" 65 -290 -190 0 0 0 0 "Old Hawaiian (Oahu)" 58 -283 -182 0 0 0 "Puerto Rico" 11 72 -101 0 0 0 0 "PRS92" -127.62195 -67.24478 -47.04305 3.06762 -4.90291 -1.57790 -1.06002 "NAD27 (Alaska) (MRE) Geoid" SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid { REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decime: 0.104719750 -6.492624500 0.104719750 -21.7812 /* this A B C D, V = A*V + B, U = C*u + D, v is longitude LATITUDE={ / * nothing for latitude regression surface, CAN BE LONGITUDE = { /* nothing for longitude regression surface, CAN BE ON HEIGHT = { /* Terms height regression result in meters the result is sum of : /* The first item for v exponent, second item for U exponent, and 0     0     1.341		"old	Hawai	ian (Hawaii)'	89 -279	-1830	000						
<pre>"Puerto Rico" 11 72 -101 0 0 0 0 "PRS92" -127.62195 -67.24478 -47.04305 3.06762 -4.90291 -1.57790 -1.06002 "NAD27 (Alaska) (MRE) Geoid" SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid (</pre>		"O d	Hawai	ian (Maui)" 6	5 -290 -1	90 0 0 1	0.0						
<pre>"PRS92" -127.62195 -67.24478 -47.04305 3.06762 -4.90291 -1.57790 -1.06002 "NAD27 (Alaska) (MRE) Geoid" SURFACE /* BASEDATUM="Clarke 1866", It is default to Spheroid { REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decime</pre>		"0]d	Hawaj	ian (Oahu)" 5	8 -283 -1	82 0 0	0 0						
<pre>{ REGRESSION -90 0 90 360 /* this the bounding box in latitude longitude in decima</pre>							3.06762	-4.9029	1 -1.5	7790 -:	. 06002		
0.104719750 -6.452624500 0.104719750 -21.781 /* this A B C D, V = A*V + B, U = C*U + D, V is longitude LATITUDE={ /* nothing for latitude regression surface, CAN BE ON HEIGHT = { /* Terms height regression result in meters the result is sum of a /* The first item for V exponent, second item for U exponent, and 0 0 1.341 /* 1.341 x V/0 x U/0 i.e. 1 0 8.458 0 2 3.742 1 1 19.896 2 0 4.249												ault to S	pheroid
LATITUDE={ } /* nothing for latitude regression surface , CAN BE LONGITUDE = { } /* nothing for longitude regression surface, CAN BE ON HEIGHT = { /* Terms height regression result in meters the result is sum of a /* The first item for V exponent, second item for U exponent, and 0 0 1.341 /* 1.341 x VAO x UAO i.e. 0 1 12.556 /* 12.556 x VAO x UAO i.e. 1 0 8.458 0 2 3.742 1 1 19.896 2 0 4.249 0 3 -12.714			RE	GRESSION -90	0 90 360	0.1047	19750	-6.49	262450	0	0.10471	9750 -	21.7817
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<pre>{     /* Terms height regression result in meters the result is sum of a     /* The first item for v exponent, second item for u exponent, and     0</pre>				LONGITU	IDE = { }	14	nothing	for lon	gitude	regree	sion su	rface, CA	N BE OM
/* Terms height regression result in meters the result is sum of a /* The first item for v exponent, second item for v exponent, and 0 0 1.341 v /0 x u/0 i.e. 0 1 12.556 /* 12.556 x v/0 x u/1 i.e. 1 0 8.458 0 2 3.742 1 1 19.896 2 0 4.249 0 3 -12.714					Ŧ								
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Ln 53, Col 2												-	IJ

9.3 Rename original "spheroid.tab" file in the system folder. Then copy edited "spheroid.tab" which contains PRS92 datum to the system folder.

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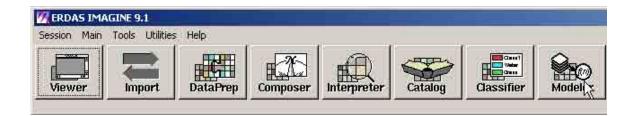
## 10. Model Maker

A model is a set of instructions processed by the IMAGINE Spatial Modeler component for performing GIS and image processing operations.

The IMAGINE Model Maker is an editor for creating models using a palette of tools. These tools are used to place graphics representing input data, functions, criteria, and output data on a page to create a graphical model by drawing its flow chart.

The Spatial Modeler Language (SML) is a modeling language that is used by Model Maker to execute the operations specified in the graphical models that you create. You can also use the Spatial Modeler Language directly to write your own script models

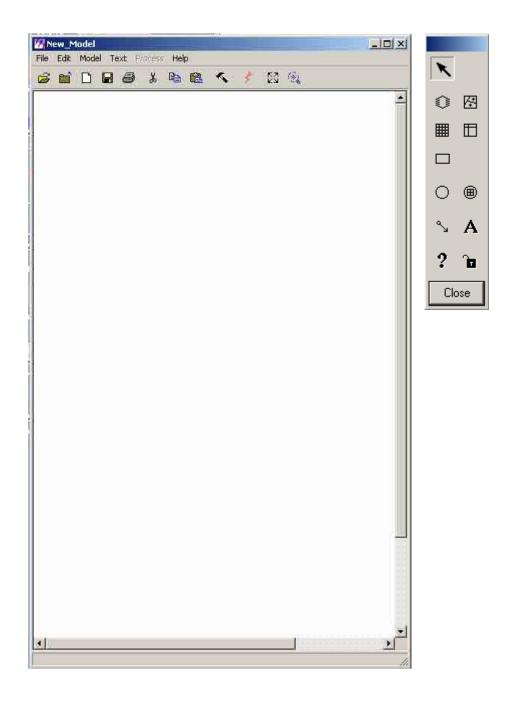
10.1 Click "Modeler" icon on Erdas main icon panel.



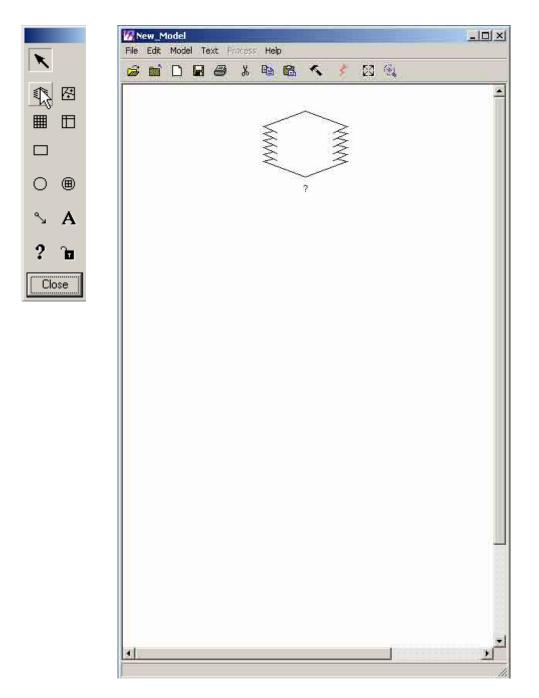
10.2 A "Spatial Modeler" button box will appear. Click "Model Maker" button.

🌆 Spatial Modele	er 🔀
Model M	aker
Model Lib	rarian
Close	Help

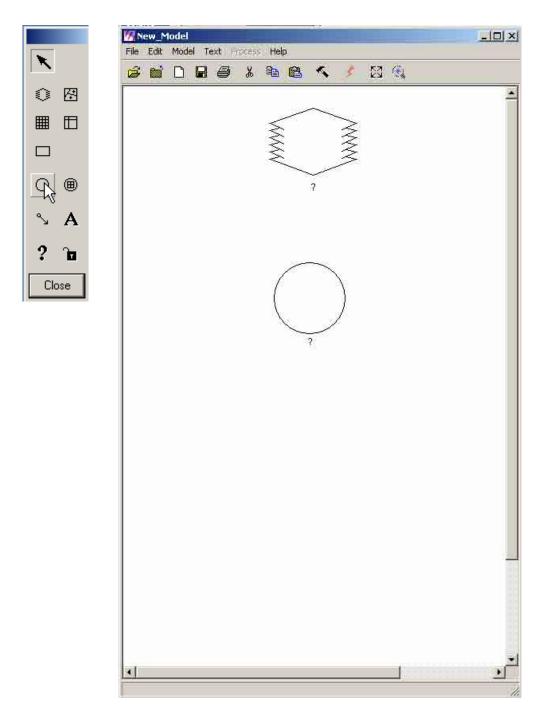
10.3 A "New_Model" window and a tool palette box will appear.



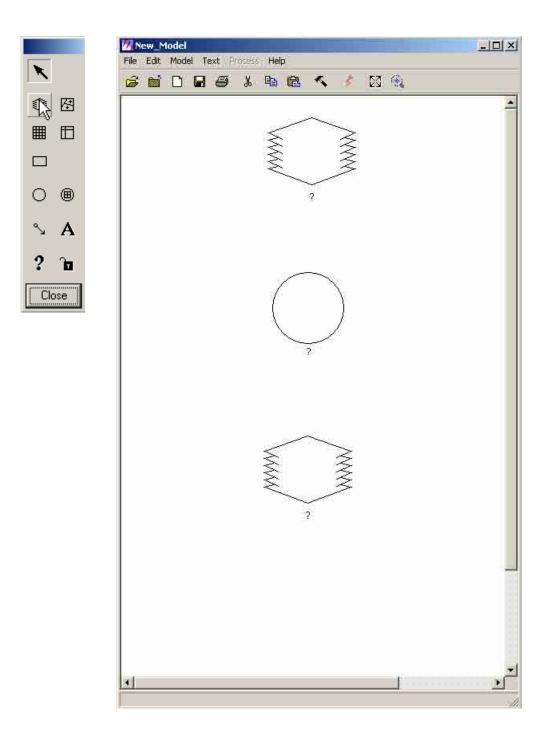
10.4 Click the Raster icon in the Model Maker tool palette. Click the pointer arrow inside the "New_Model" window.



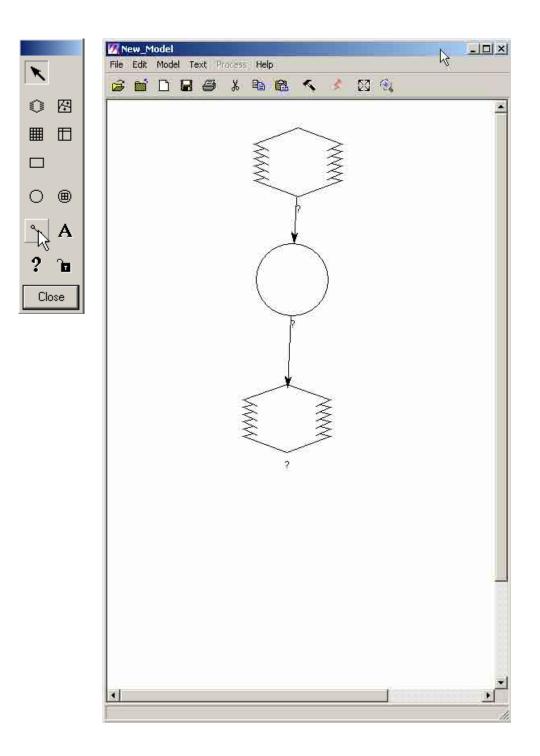
10.5 Select the Function icon in the Model Maker tool palette. Click the pointer arrow inside the "New_Model" window.



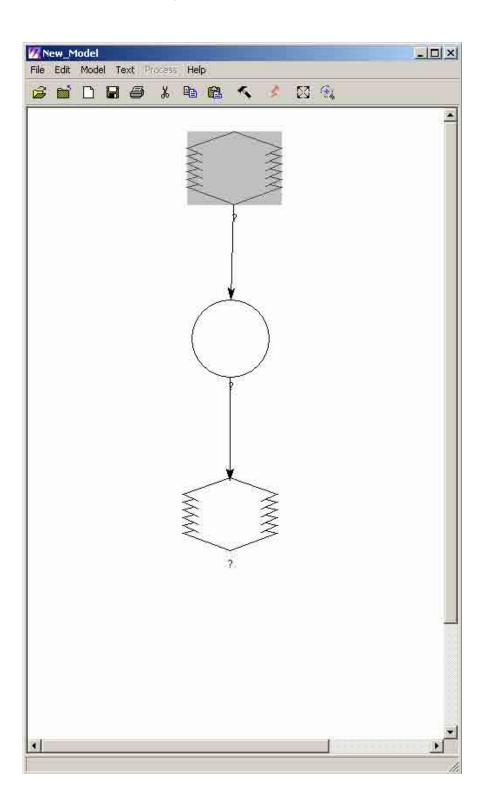
10.6 Click another Raster icon in the Model Maker tool palette. Click the pointer arrow inside the "New_Model" window.



10.7 Select the Connect icon in the Model Maker tool palette. Connect the raster and function symbol by clicking and dragging the point arrow between each symbol.



10.8 Double click first raster symbol



File Name: (*.img)	Imput
Prompt User for File at Run Time	Number of Layers Number of Bows Number of Columns: Interpolation:
Jutput:	Processing Window
Data Type:     Unsigned 8-bit       File Type:     Continuous       Ignore     0.0000 + in Stats Calculation	C         Map         C         File         From Inquire Box           ULX         0.000000
	Declare as Area of interest Integer
Temporaty Raster Only Integer	C Recode Data Setur Recode Data

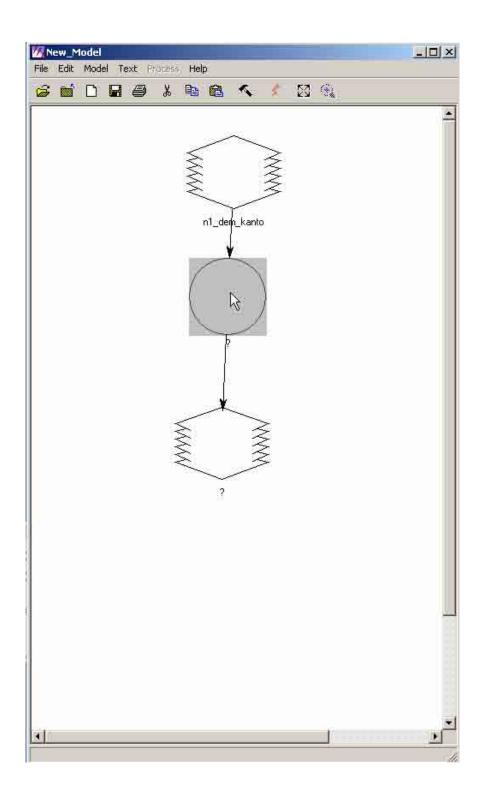
10.9 A "Raster" dialog box will appear. Click the "Open" icon to select the input raster.

0.10 A "File Name" dialog box will appear. Navigate thru the directory, locate the folder and select the raster file (e.g. dem_kanto.img) to be used. Then click "OK".

1

File Name:	×
File	
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23ku_class.img 🛃 subset_2.img	OK N
dem_kanto.img	Cancel
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Pijers1ovn_yamanakako_9702.img Pi7_tokyobay.img	I
17ms234_yamanakako_0210.img	Recent
🔄 lanier.img	Goto
subset_1.img	
File name: dem_kanto.img	
Files of type: IMAGINE Image (*.img)	
greyscale : 901 Rows x 867 Columns x 1 Band(s)	

10.11 Double click function symbol.



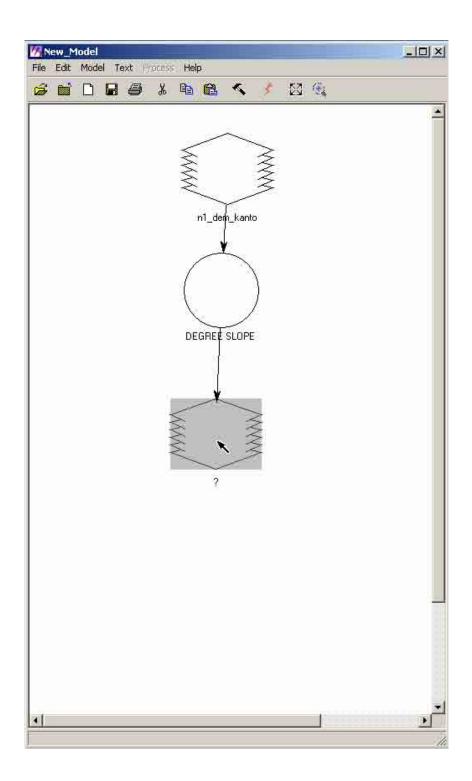
10.12 A "Function Definition" dialog box will appear. Select the function (e.g. Surface) in the "Functions" box.

wailable Inputs:	Time (	i ant	E. C		Functions:	Analysis	18
\$n1_dem_kanto		**	<u> </u>	*	CLUMP ( < la	Analysis	
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						Other Relational	
						Size Stack Statistics	
						Statistical String	

10.13 Click the syntax (e.g. DEGREE SLOPE [<raster>,<units>]) or operation of the function (e.g. Surface) selected. Change <raster> to \$n1_dem_kanto, and <units> to "meter". Then click "OK".

M Function Definition				-	
Available Inputs: \$n1_dem_kanto	*			×	Functions Surface
	7	8	9	Ŀ	DEGREE SLOPE ( <raster> &lt; <units> ) DEGREE SLOPE (<raster> , <xsize> , <ys PERCENT SLOPE (<raster> , <units> )</units></raster></ys </xsize></raster></units></raster>
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DEGREE SLOPE ( \$n1_dem_kanto , "me	ster" )				4
ОК	Clear		j_	Cancel	Help

## 10.14 Double click last raster symbol



10.15 A "Raster" dialog box will appear. Click the "Open" icon to select the input raster.

🔗 Raster	
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Prompt User for File at Run Time	Number of Layers Number of Flows Number of Columns: Interpolation
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Ignore 0.0000 🛨 in Stats Calculation	Declare ac Area of Interest
Temporary Raster Only	C Recode Data C Don't Recode Data
OK,	Cancel Help

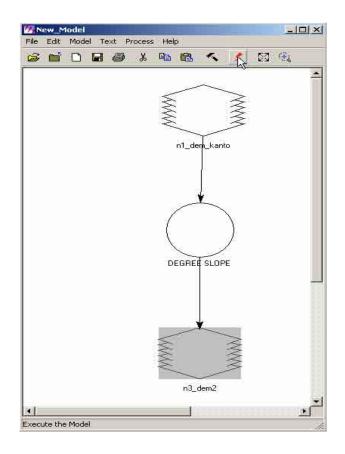
10.16 A "File Name" dialog box will appear. Navigate thru the directory and locate the folder where the output model is to be saved. Type the output file name (e.g. dem2). Then click "OK".

File Name:		51	×
File		0	
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BAELicense	🦲 System Volume Information	beck_supervise	Cancel
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R		<u> </u>	
File name: dem2			
Files of type: IMAGINE Ima	ge (*.img)		
77 Files, 15 Subdirectories,	21 Matches, 149871760k Bytes Free	8	

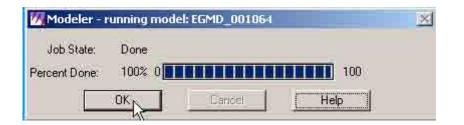
10.17 Click "OK" in the "Raster" dialog box.

File Nam	ne: (* img)		input
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utput:	E Dalua (CE dala		Processing Window)
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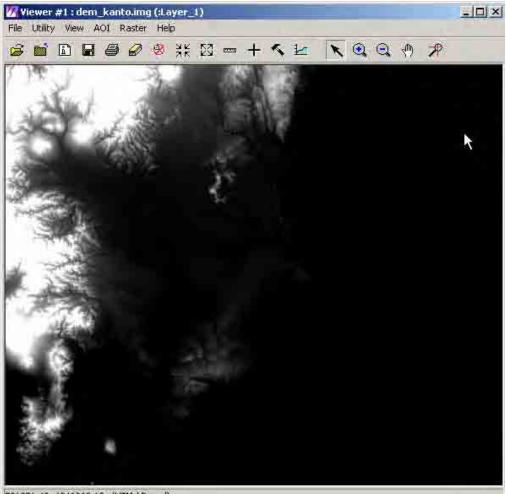
10.18 Click "Execute the Model" icon in the "Raster" dialog box.



10.19 The system will process the data. Click "OK" when done.



10.20 Open a viewer window and open the output model file (e.g. dem2.img)

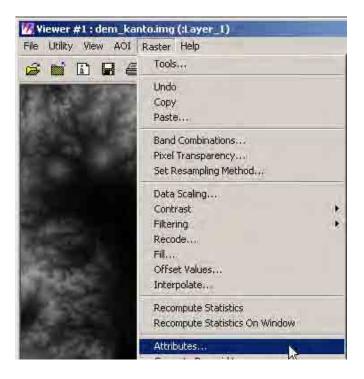


581351.43, 4046062.12 (UTM / Bessel)

10.21 To change the color display of the image. Click "Open Layer" icon and click "Raster Options" tab. Select "Pseudo Color" in the "Display as" box. Then click "OK".

Display as :	Gray Scale	ОК
	True Color Pseudo Color	Cancel
	Gray Scale	Help
		!
		Recent .
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Clear Dis		
Fit to Fran	e 🔽 No Stretch	
🔽 Data Sca	ng 🦵 Background Trans	sparept

10.22 On the viewer window, pull down "Raster" and click " Attributes".



10.23 A "Raster Attribute Editor" dialog box will appear. Click the "Color" column. Pull down "Edit" and click "Colors".

Edit Help						
Column Properties		Layer Numbe	er: 1	4		
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Colors	ii)	436160		1		F
Add Class Names	13	44736			1	
Add Area Column		30208			1	
Cell to Edit Next	- <b>)</b> [	17088			1	
	_	12160			1	
Deselect Rows		11584			3	
Select All Rows		8576			3	
Invert Row Selection	[	7424			3	
Criteria		7744			3	
Сору		6400			1	
Paste		6016			1	
Deselect Columns						

10.24 A "Color" dialog box will appear. Select "By Equal Areas" in the "Slice Type" box. Then click "Apply".

Colors			×
Slice Method:	IHS Slice 👱	Start Color:	
Slice Type:	By Value 💌	End Color	
Hue Variation:	By Value By Equal Areas	Number of levels:	256 +
	S		-1
		lose Help	

10.25 The color display of the image will be changed.

