



ERDAS IMAGINE Defense Workflow

Hexagon's Geospatial Division

January 9, 2020

Scope

This training will focus on defense-oriented workflows within ERDAS IMAGINE. During this training, attendees will go through the standard Imagery Intelligence (IMINT) workflows in ERDAS IMAGINE, including geo-correcting the images before performing change detection, doing object recognition, and generating intelligence reports. A short introduction to M.App X, our cloud-based image exploitation software, will also be provided to show how some of the workflows previously learned in ERDAS IMAGINE can be performed on the cloud.

Agenda

General rules:

- Training will start at 10 am on Monday
- Training will be conducted from 9 am to 5 pm
- Training will end at 2 pm on Friday
- There will be 15-minute breaks during the training
- Trainees need to bring their own laptops

DAY 1	
Afternoon	Section 1 – Installation and Licensing Process Walkthrough
	Section 2 – ERDAS Imagine Overview In this section you will learn the ERDAS Imagine architecture, modules, and high-level main functionalities.
	Section 3 – Image Viewer In this section, you will use the Viewer to visualize various types of raster data. The focus will be on displaying and manipulating raster data using Viewer tools.

	<p>This section will also look at other tools available in the ERDAS IMAGINE icon panel and how to customize your workspace by setting preferences.</p>
	<p>Section 4 – Using Band Combinations and Indices</p> <p>Familiarizes attendees with the advantages of using different band combinations. Additionally, this section will look at some basic methods of raster algebra using a near infra-red band.</p>
DAY 2	
Morning	<p>Section 5 – Spectral Characteristics</p> <p>This section will introduce attendees to the wide range of tools available within IMAGINE for the viewing, analysis, and interpretation of spectral characteristics of images.</p>
	<p>Section 6 – Rectification Workflows</p> <p>This section covers rectification, the process of projecting data onto a plane and making it conform to a map projection system. Images can be converted to real-world ground coordinates by referencing the image to another source that is in the desired map projection.</p>
	<p>Section 7 – Subsetting an Image</p> <p>This section will introduce students to a multitude of approaches for subsetting. A subset using an active AOI layer on the screen will be used. The steps to create and define shapefile attributes will also be covered. This will provide a starting point to lead into subsetting by shapefile attributes using the MosaicPro Tool.</p>
Lunch Break	
Afternoon	<p>Section 8 – Point Clouds</p> <p>Introduces point cloud collection methods such as LiDAR and photogrammetry. Attendees will learn about point clouds as a data format and a number of processing and editing methods.</p>
	<p>Section 9 – Spatial Modeler</p>

	<p>This section will introduce students to the ERDAS IMAGINE Spatial Modeler.</p>
	<p>Section 10 – Photogrammetry and Point Cloud Processing</p> <p>This session explains the different types of information stored in point cloud data and how to use the ERDAS IMAGINE viewers to visualize the data, then apply ERDAS IMAGINE’s tools to extract information from the data.</p>
DAY 3	
Morning	<p>Section 11 – Mission Planning with VirtualGIS</p>
	<p>Section 12 – Finding Helicopter Landing Zones</p>
	<p>Section 13 – Change Detection</p> <p>This section will introduce the ERDAS IMAGINE change detection process using visual change identification tools and geoprocessing change detection techniques.</p>
Lunch Break	
Afternoon	<p>Section 14 – Object <u>D</u>etection Using Machine Learning</p>
	<p>Section 15 – Image Exploitation Workflow</p>
	<p>Section 16 – Feature Counting and Report Creation</p>
DAY 4	
Morning	<p>Section 17 – SAR Image Exploitation</p>
	<p>Section 18 – SAR Image Coherence Change Detection</p>
	<p>Section 19 – SAR Feature Extraction</p>
Lunch Break	

Afternoon	Section 20 – M.App X Overview
	Section 21 – M.App X Viewer Capabilities
DAY 5	
Morning	Section 22 – M.App X Exploitation Workflow
	Section 23 – M.App X Geoprocessing Workflow
	Wrap Up and Open Discussions

Prerequisites

- Attendees must be proficient in the English language
- Attendees should have a basic understanding of optical or SAR imageries

Hardware requirements:

Supported and Recommended	
CPU	64-bit: Intel 64 (EM64T), AMD 64, or equivalent (multi-core processors are strongly recommended)
Memory/RAM	16 GB or more strongly recommended
Disk Space	4 GB for software 15 GB for example data
Display Properties	24-bit color depth
Graphics Card	NVIDIA Quadro K5200, K4200, K2200, K420, K5000, K4000, K600, or equivalent dedicated graphics card recommended
Peripherals	Mouse or pen for input

Software requirements:

Operating system for Java based client (for example)
Windows® 7 SP1 or higher, Professional and Ultimate (64-bit)
Windows® 8 (Standard), Professional and Enterprise (64-bit)
Windows® 8.1 (Standard), Professional and Enterprise (64-bit)
Windows 10 Pro (64-bit)

Disk space requirements

Public Training Schedule

Date	Location	Type



About Hexagon

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon's Geospatial division creates solutions that deliver a 5D smart digital reality with insight into what was, what is, what could be, what should be, and ultimately, what will be.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 4.3bn USD. Learn more at [hexagon.com](https://www.hexagon.com) and follow us @HexagonAB.

© 2019 Hexagon AB and/or its subsidiaries and affiliates. All rights reserved. Hexagon and the Hexagon logo are registered trademarks of Hexagon AB or its subsidiaries. All other trademarks or service marks used herein are property of their respective owners.