



IMAGINE DELTACUE™

CHANGE DETECTION SOFTWARE FOR ERDAS IMAGINE®

Product Description
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Overview

Change detection is one of the most common uses of remotely sensed data. Timely, synoptic views of the earth's surface at a variety of spatial and temporal scales provide dramatic evidence of the dynamic processes of interest to a wide variety of users. The efficient detection and analysis of changes between two dates or times of imagery is a complicated task that requires a broad assortment of image processing tools and can be overwhelming for even the most advanced users.

The IMAGINE DeltaCue Change Detection Software is a new add-on for ERDAS IMAGINE® that simplifies the complexity of the change detection process and helps both advanced and novice users rapidly produce meaningful results. IMAGINE DeltaCue uses project-based workflows to manage

- preprocessing,
- change detection,
- change filtering and
- change results viewing and interpretation.

Standardizing and automating preprocessing steps, assembling a wide variety of powerful change algorithms and providing flexible tools to target the specific *kinds* of changes of interest to the user, are a few of the ways that IMAGINE DeltaCue breaks new ground in image processing software.

An adaptable suite of processing procedures, IMAGINE DeltaCue provides tools for *Broad Area Search* for change across entire images, targeted *Site Monitoring* visualization tools for detailed analysis, and a customized *Change Viewer* interface, specially designed for change detection studies, that allows the user to produce output in a variety of formats appropriate for integration into GIS and other databases.

Designed with the production setting in mind, IMAGINE DeltaCue simplifies the complexity of the change detection process and rapidly moves the user from image to information to results. Change detection plays an important role in the “feature lifecycle” because it provides the capability to update features data based upon new imagery

Key Features

IMAGINE DeltaCue Wizards

Wizard workflows assist the user with initial inputs and selection of preprocessing and processing steps to target changes of interest. Project files established by the wizard manage the resulting ancillary files generated, document procedures that have been run and allow the user to return to a project and pick up where they left off.

Change Algorithms

- Incorporates multiple change detection algorithms
- Magnitude

- Tasseled Cap
- Primary Color (R,G,B)
- Single Band
- Band Slope

Change Thresholding

- Interactive Change Threshold tool provides user with a more intuitive and dynamic way to set critical change thresholds
- Automatic % change threshold allows for rapid, repeatable automatic processing

Change Filters

- Allows for filtering change results based on specific spatial and spectral characteristics, including:
 - Spectral class
 - Material type
 - Area of change
 - Shape of change
- Provides misregistration filter to minimize the effect of false alarms due to poorly co-registered image pairs

Automatic Preprocessing

- Automatically crops analysis down to just the area in common to the image pair
- Performs image to image radiometric normalization with accommodation for the effect of clouds and cloud shadow

Customized Change Viewer

- Geo-linked windows that pan and zoom together with automatic synchronization
- Overlay of change results on top of original imagery
- Change magnifier that allows for rapid investigation of before and after areas
- Flicker and swipe tools available off the toolbar
- Contrast and Brightness enhancements easily applied to all layers
- Interactive spectral segmentation tool allows for removal of spectral classes not of interest across entire image
- Access to ERDAS IMAGINE's AOI, annotation and vector tools for output development
- Rapid export of change detection results to ESRI shapefile format

Settings Files

- Process settings can be saved for automatic use by less experienced users on similar image pairs

Site Monitoring Viewer

- Customized display for the interpretation and monitoring of subtle changes of specific sites
- Multitemporal display of individual bands as well as Tasseled Cap components
- Blend tool

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