

Trimble eCognition® Essentials

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Trimble Documentation

eCognition Essentials 1.3

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Acknowledgments

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1 Overview

1.1 About eCognition Essentials

Trimble® eCognition® Essentials is a powerful out-of-the-box land cover mapping solution based on the industry-leading eCognition technology for object-based image analysis. It allows users at any skill level to quickly produce high-quality GIS-ready deliverables from imagery.

eCognition Essentials is aimed towards commercial and non-commercial user groups that will benefit from a generic, automated and intuitive mapping tool:

- Remote Sensing Professionals focusing on image analysis tasks
- GIS Image Analysts performing mapping tasks

eCognition Essentials offers outstanding capabilities for a variety of use cases, i.e.

- Basic land cover and change mapping for monitoring of land degradations.
- Forest cover and forest change mapping for carbon sequestering assessment on REDD++ projects and Kyoto Protocol reports.
- Urban cover and urban change mapping for environmental monitoring and urban planning.
- Agricultural land mapping and change detection for crop health analysis and agricultural subsidies on country level.



1.2 Key Features

All-In-One Image Analysis Solution

Built on core eCognition software technology, Trimble® eCognition® Essentials offers users a complete out-of-the-box solution for object-based image analysis. With a focus on quickly obtaining quality results and actionable data, eCognition Essentials allows users to easily analyze and transfer image data into intelligent geospatial information - for example, creating land cover maps to be exported into a GIS database.

Intuitive Graphical Interface

Trimble eCognition Essentials offers an easy-to-use, intuitive graphical user interface for anyone utilizing remote sensing data. With immediate access to automated segmentation and classification tasks, the software puts a sample-based image classification workflow right at the hand of a production-oriented user.

Less Complexity - more Capability

Powered by proven eCognition technology, eCognition Essentials is a stand-alone application that covers all steps of sample-based image analysis in the remote sensing market. By applying predefined and structured rules to image analysis tasks, eCognition Essentials offers a streamlined workflow to quickly extract geospatial information from raw satellite image data. At any moment, only the most relevant actions will be displayed on the screen, while the sequence of components follows a pre-defined format to guide users towards optimal results.

Save Time with Automated Functions

Users can achieve professional results with minimal turnaround times thanks to automated image analysis functions and batch processing capabilities. These functions include image segmentation, sample-based classification, and change detection alongside a set of interactive tools for quality control. To analyze several datasets without manual interventions or to execute the analysis on dedicated server hardware, eCognition Essentials users can submit analysis jobs to an eCognition Server which will then automatically process all submitted data in batch mode. Such automatisms allow GIS and Image Analysts to quickly create high quality deliverables, freeing their time to focus on the interpretation of results and decision-making.

Access the Trimble Data Marketplace

With the Trimble Data Marketplace plug in for eCognition Essentials you can easily access remote sensing imagery and begin generating results immediately. The platform will be expanded constantly, with the following sets currently available:

- The Landsat 8 library features clear sky images, automatically added to the libraries for eCognition
- Digital Globe Precision Aerial data from the U.S. and Western Europe

1.3 eCognition Essentials 1.3 Highlights

Interactive Object Annotation

eCognition Essentials 1.3 now supports the annotation of individual objects allowing users to easily enter object-specific information that enriches the content for resulting GIS-Layers. Field crews or GIS-operators – consumer of results generated with eCognition Essentials 1.3 – benefit from a better and clearer description of individual objects which reduces ambiguities and makes their work more efficient.

Enhanced GIS Integration

Users of eCognition Essentials 1.3 can now quickly generate smaller and less complex GIS data while still retaining the rich object based GIS information.

The capabilities result from enhanced options that enable users to select the class(es) to be exported as well as the selection the features to be written into the attribute table of a GIS-layer. This results in greater flexibility and reduced time to complete GIS deliverables.

Extended multi-core processing capabilities for faster project completion

eCognition Essentials 1.3 also includes the enhanced multi-core capabilities that have been introduced with eCognition 9.2. These capabilities maximize the power of computing hardware, reduce processing bottlenecks, and allow users to complete projects in up to a third of the time taken with prior versions.

2 New Features - Bug Fixes and Limitations

2.1 New Features

New Features in eCognition Essentials 1.3.0:

| Story | Feature | Description |
|-----------------------|--|---|
| Annotation | Improved action 'Manual editing' (former name 'Manual reclassification') | Possibility to annotate image objects manually |
| Data Import | Lizardtech driver for JPEG2000 and MrSID file format | Improved JEG2000 (JP2) reading support and import of MrSID image files in SID format |
| Data visualization | Visualization of color ramp legend in the view | Shows a gradient for single image layer and displays corresponding layer values |
| Export | Improved action 'Export' | Possibility to export shape features as attribute |
| Export | Improved action 'Export' | Possibility to export only selected classes |
| Performance | Improved algorithm: 'multiresolution segmentation' | Additional benefits from multi-core support in the "feature view" |
| Security | Updated licensing library FlexNet Publisher to version 11.13.1.2 | This update addresses a security vulnerability described in https://www.kb.cert.org/vuls/id/485744 |
| Software Installation | Trimble Software Publisher's Digital Certificate introduced | Code signing implemented to confirm software author |
| Usability | Improved handling for non-writable results folder | Error message appears for non-writable folder and a default folder is selected |
| Usability | Improved handling for results folder | Transfer of project to another user with automatic adaptation of result folder to the new user |

2.2 Bug Fixes

Bug Fixes in 1.3.0:

| Reference | Description |
|-----------|--|
| ECOG-2813 | No error message provided after license activation failure |
| ECOG-3328 | License borrowing tool not working with specified LS port |
| ECOG-3566 | Platform version not displayed with 3 digits in system info |
| ECOG-3586 | After load solution DSM and DTM assignment refers to previously selected layers |
| ECOG-3587 | Misalignment of different image layers when unit is 'feet' |
| ECOG-3635 | Threshold segmentation action slows down analysis builder for some images |
| ECOG-3655 | Multiple error messages (one for each layer) are displayed when image location has changed |
| ECOG-3670 | Multiresolution-segmentation algorithm sometimes crashes on large images (low memory conditions) |
| ECOG-3689 | Area features sometimes do not evaluate correctly when project unit is 'feet'. |
| ECOG-3709 | License return causes error 'Service for Activation or Return is unavailable' |

2.3 Known Issues and Limitations

An intended limitation is that the *trial version* of eCognition Essentials does not allow saving of projects.

In case projects or configurations based on eCognition Essentials Version < 1.2 are opened full functionality of Version ≥ 1.2 cannot be applied. Therefore Trimble recommends to regenerate workflows based on the new version.

3 Acknowledgments

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3.3.1 gcore/Verson.rc

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3.3.2 frmts/gtiff/gt_wkt_srs.cpp

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