

# RELEASE NOTES

## Trimble eCognition® Suite

Version 9.2.1  
July 2016  
[www.eCognition.com](http://www.eCognition.com)



## **Trimble Documentation**

### eCognition 9.2

#### Release Notes

## **Imprint and Version**

#### Document Version 9.2.1

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Published by:

Trimble Germany GmbH, Arnulfstrasse 126, D-80636 Munich, Germany

Phone: +49-89-8905-710

Fax: +49-89-8905-71411

Web: [www.eCognition.com](http://www.eCognition.com)

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# Contents

<b>1 Overview</b>	<b>4</b>
1.1 About eCognition Suite	4
1.2 Key Features	5
1.3 eCognition Suite 9.2 Highlights	7
<b>2 New Features - Bug Fixes and Limitations</b>	<b>9</b>
2.1 New Features	9
2.2 Bug Fixes	11
2.3 Known Issues and Limitations	13
<b>3 Acknowledgments</b>	<b>14</b>
3.1 The Visualization Toolkit (VTK) Copyright	14
3.2 ITK Copyright	15
3.3 Geospatial Data Abstraction Library (GDAL) Copyright	15
3.3.1 gcore/Verson.rc	15
3.3.2 frmts/gtiff/gt_wkt_srs.cpp	16

# 1 Overview

## 1.1 About eCognition Suite

Trimble® eCognition® Suite is an advanced analysis software available for geospatial applications. It is designed to improve, accelerate and automate the interpretation of a variety of geospatial data and enables users to design feature extraction or change detection solutions to transform geospatial data into geo-information.

eCognition imports a variety of geospatial data, fusing them together into a rich stack of geo-data for the analysis. The analysis logic is structured into series of steps to create a computer-based representation of an expert's geospatial interpretation process a so called Rule Set. eCognition then combines the analysis logic with scalable computing power to identify changes over time or features on the earth's surface across very large sets of data.

eCognition Suite version 9.2 is a major release and includes a range of new features and bug fixes. We recommend upgrading to this new version to benefit from the new features and improvements. For an overview of the highlights please refer to chapter eCognition Suite 9.2 Highlights, page 7. A complete list of new features and bug fixes can be found in chapter New Features - Bug Fixes and Limitations, page 9.



## 1.2 Key Features

### Building Analysis Solutions

The eCognition technology examines image pixels not in isolation, but in context. It builds up a picture iteratively, recognizing groups of pixels as objects. Just like the human mind, it uses color, shape, texture, shape and size of objects, as well as their context and relationships, to draw the same conclusions that an experienced analyst would draw.

To build an analysis solution, it is possible to flexibly combine the image interpretation steps like object creation (segmentation), object classification (knowledge based, fuzzy logic, machine learning), object detection (template matching) and object modification (fusing, smoothing, orthogonalization, simplification) into a Rule Set or even a new application (Rule Set with UI) to solve the analysis problem.

The result is a unique approach to translate mind models (why a human interpreter can see the objects, changes, or features in the geospatial data) into computer understandable code (Rule Set) or an individual/customized application.

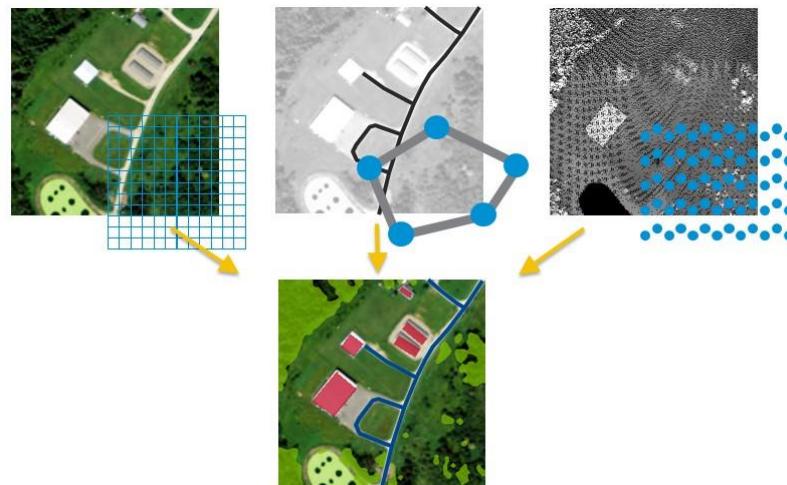


### Leveraging Data Synergies

eCognition can fuse a variety of geospatial data, such as spectral image data, 3D structure data from point clouds and spatial/thematic data from GIS vectors.

## 1 Overview

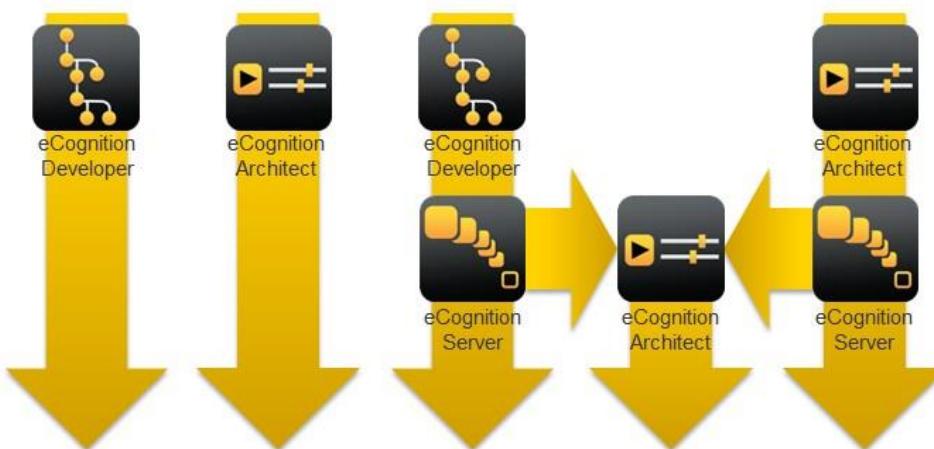
The proximity of eCognition to GIS, its ability to link and fuse the available data in an analysis - combined with the straightforward export of results to GIS layers - help eCognition users to achieve outstanding results.



## Efficient workflows

The eCognition Suite offers three different components which can be used stand-alone or in combination to solve even the most challenging fully automated and semi-automated production tasks:

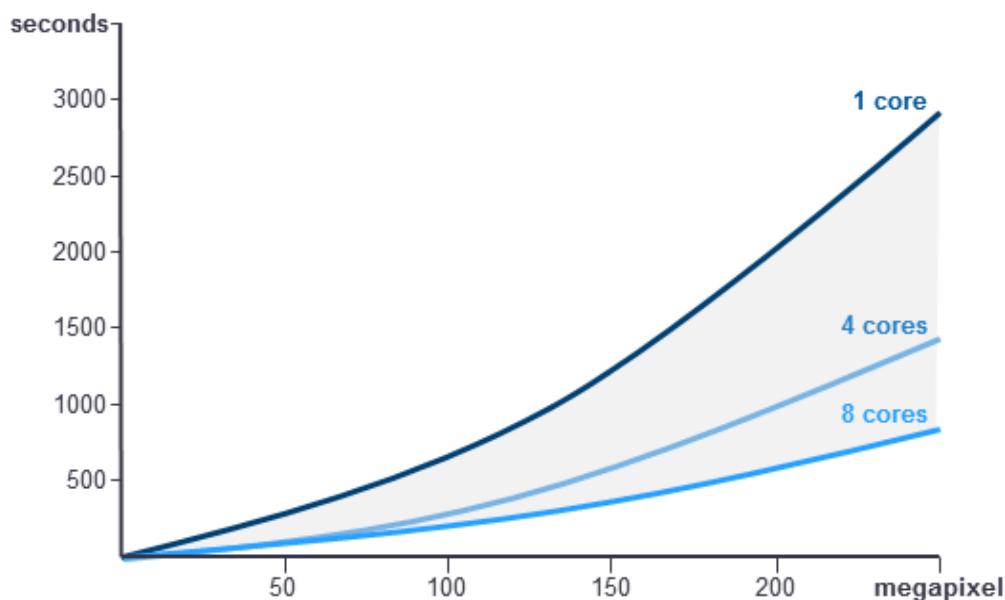
- eCognition Developer is the development environment for object-based image analysis. It is used in geospatial industry to develop RuleSets or applications for eCognition Architect for the automatic analysis of geospatial data.
- eCognition Architect enables non-technical professionals such as vegetation mapping experts, urban planners or foresters to leverage eCognition technology. Users can easily configure, calibrate and execute analysis applications (Rule Set in combination with a UI) created in eCognition Developer.
- eCognition Server software provides a powerful processing environment for batch and parallel execution of analysis jobs, based on RuleSets or applications.



## 1.3 eCognition Suite 9.2 Highlights

### Extended Multi-Core Processing Capabilities for Faster Project Completion

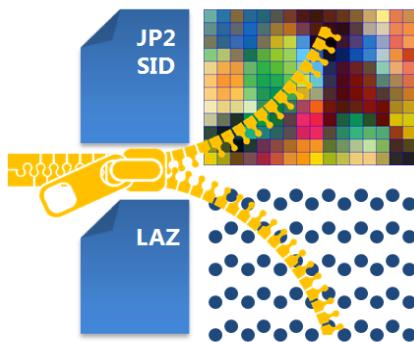
With the introduction of multi-core processing in eCognition 9.1, customers have been enabled to complete projects faster than before. Further enhancements in eCognition 9.2 now allow users to utilize up to 8 cores with selected algorithms that typically require longer processing times (multiresolution segmentation, template matching, and layer arithmetics).



For example, the multiresolution segmentation algorithm on an 8,000 by 8,000 pixel image would take approximately 6 minutes using 1 core, 4 minutes using 4 cores and 2 minutes using 8 cores. The new multi-core 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.

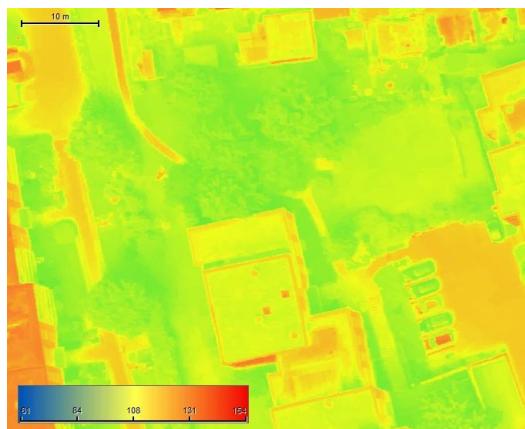
## Advanced Data Support

To reduce time taken in converting data, eCognition 9.2 includes a new integrated driver that significantly reduces the time required to utilize a range of industry-standard data products. The new drivers support users working with JPEG2000 (\*.JP2) or MrSID (\*.SID) image files and the point cloud compression format LASzip (\*.LAZ).



## Enhanced Interactive Functions for Improved Usability

To allow users to create a more intuitive and complete solution within eCognition, a range of options have been enhanced in version 9.2. Solution developers now benefit from enhanced capabilities to edit, visualize and check GIS layers within the process tree. For better visualization, developers can make use of new color ramps and configure a legend that is visualized in the image data view.



# 2 New Features - Bug Fixes and Limitations

## 2.1 New Features

New Features in eCognition 9.2.0:

Story	Feature	Description
Application Development	New algorithm: 'Delete thematic vector object'	New algorithm to delete point, line or polygon vector object(s) in a thematic vector layer based on attribute(s)
Application Development	New feature 'Is image layer displayed'	New feature added to Scene Features > UI-related > Is image layer displayed
Application Development	New feature 'Is folder writable'	New feature added to Scene Features > File-system > Is folder writable
Application Development	Improved 'find/replace'	User can now search not only in rule set but also action library code
Application development	Improved algorithm 'Set custom view settings'	New parameter 'Show color ramp legend' added and option to set image layer mixing including false color mixing modes (hot metal and rainbow).
Application development	Improved algorithm 'Start thematic edit mode'	New parameter 'New layer type' added to select point, line or polygon layer type for new thematic layer
Application development	Improved algorithm 'Modify thematic attribute column'	Algorithm allows usage of variables, array items and features
Application development	Improved algorithm 'Set cursor tooltip'	Algorithm allows usage of variables for tooltip
Application development	Improved algorithm 'Configure object table'	New parameter 'Object table visibility' added to specify change of table visibility
Classification	Improved algorithm 'cluster analysis'	Algorithm allows usage of domains

## 2 New Features - Bug Fixes and Limitations

Classification	Possibility to annotate image objects manually	Annotation can be added using image object table or algorithm 'Select Input Mode'
Data Import	New driver: '.laz' support	It is now possible to import files in laszip format
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
Image analysis	Improved algorithm 'Pixel filter 2D'	New convolution filter added with parameters 'Custom kernel' and 'Border'
Native vector handling	New algorithm: 'Create thematic vector object'	New algorithm to create a new point or line vector object to be inserted it in a thematic vector layer
Native vector handling	New feature 'Is vector at active pixel'	New vector feature added to Vector-related > Position > Coordinate > Is vector at active pixel
Native vector handling	New features 'X max', 'Y max', 'X min' and 'Y min'	New vector feature added to Vector-related > Position > Coordinate
Native vector handling	New feature 'Is vector selected'	New vector feature added to Vector-related > Is vector at active pixel
Performance	Improved viewer: multi-core support for feature view	Users benefit from multi-core support in the 'feature view'
Performance	Improved algorithm: 'multiresolution segmentation'	Additional benefits from multi-core support in the 'feature view'
Performance	Improved algorithm: 'template matching'	Performance improvements in template matching algorithm (multi-core support and algorithmic improvements)
Performance	Improved algorithm: 'layer arithmetics'	Multi-core support for the 'layer arithmetics' algorithm
Security	Updated licensing library FlexNet Publisher to version 11.13.1.2	This update addresses a security vulnerability described in <a href="https://www.kb.cert.org/vuls/id/485744">https://www.kb.cert.org/vuls/id/485744</a>

## 2 New Features - Bug Fixes and Limitations

Software Installation	Trimble Software Publisher's Digital Certificate introduced	Code signing implemented to confirm software author
Usability	New option 'Save project history in workspace'	Users can decide if project history for workspaces should be saved or not
Usability	Improved features 'Active pixel x-value' 'Active pixel y-value'	Features support selection of unit
Usability	Enhanced display functionality of vectors	Visualization of multiple vector layers in manual editing mode

New Features in eCognition 9.2.1:

Story	Feature	Description
Usability	Improved manual editing	Thematic line endpoints can be entered by double-click
Usability	New scene feature 'system date/time'	Returns current system date/time as a string
Usability	Improved dialog 'membership function'	Allow unlimited value range in fuzzy membership functions

## 2.2 Bug Fixes

The update includes the usual bug fixes and improved performance and system stability.

Bug Fixes in 9.2.0:

Reference	Description
ECOG-2813	No error message provided after license activation failure
ECOG-3186	eCognition License Server installation fails at Suse Linux Enterprise Server 12
ECOG-3306	Widget 'radio button' sometimes stays off after clicking on it
ECOG-3328	License borrowing tool not working with specified LS port
ECOG-3335	Actions can be moved in read-only solution

## 2 New Features - Bug Fixes and Limitations

ECOG-3408	Customized vector features do not work as expected
ECOG-3426	Algorithm 'write thematic attributes' clears vector selection
ECOG-3454	Not possible to load file .gdb with 'select file' widget
ECOG-3462	Unnecessary refreshing of thematic attribute table affects performance
ECOG-3522	Autonaming of output layer in 'pixel sliding filter' algorithm is sometimes incorrect
ECOG-3527	Selection in 'select array widget' not kept even when item is not in available items anymore
ECOG-3529	FT Coordinate system not handled properly for LAS files
ECOG-3544	HSI features incorrectly evaluate to zero in some cases
ECOG-3551	Ruleset with distance to vector object feature does not load if vector layer is not assigned
ECOG-3566	Platform version not displayed with 3 digits in system info
ECOG-3573	Edge 3d filter produces incorrect results on Linux
ECOG-3575	Exported image has incorrect geoinformation
ECOG-3576	Object outlines appear in template matching samples
ECOG-3584	Inquiry about saving vector layer pops up even if vector layer does not exist anymore
ECOG-3590	Tooltip not working for 'check box' widget
ECOG-3592	Error message when exporting temporary layer to ASCII format
ECOG-3642	Features only used in action library and not ruleset might disappear
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-3682	Subset export for images with "feet" as unit doesn't work properly
ECOG-3687	When multi-resolution segmentation is using thematic vector layer, the rasterization step of segmentation was not cancelable
ECOG-3689	Area features sometimes do not evaluate correctly when project unit is 'feet'
ECOG-3702	Number of vector objects' not always calculated correctly for polygons and lines

	located outside the map limits
ECOG-3709	License return causes error 'Service for Activation or Return is unavailable'
ECOG-3710	The "show/hide comment window" button doesn't work in process tree and class hierarchy windows

Bug Fixes in 9.2.1:

Reference	Description
ECOG-3824	Developer crashes when adjusting feature view range values
ECOG-3799	Developer crashes when feature view tool range is entered
ECOG-3793	Developer crashes after MRS when displaying Mean Layer Feature values
ECOG-3762	Point cloud filters may not work properly when filtering is based on variables
ECOG-3833	Inaccurate rasterization of line vectors
ECOG-3808	Crash when executing algorithm 'layer arithmetics'
ECOG-3794	Crash when executing algorithm 'LIDAR file converter'
ECOG-3746	Processing unexpectedly slow for very wide images (>25000 pxl) and low RAM
ECOG-3956	Add new node in admin console not working in Red Hat Linux 6

## 2.3 Known Issues and Limitations

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

Since eCognition 9.0 it is not possible to create and use 3D raster stacks based on point cloud data, because the Z resolution of LAS files is not supported by the LAS driver anymore.

The License Server does not support the Linux distribution CentOS 6.

# 3 Acknowledgments

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## 3.3 Geospatial Data Abstraction Library (GDAL) Copyright

### 3.3.1 gcore/Verson.rc

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### 3.3.2 frmts/gtiff/gt\_wkt\_srs.cpp

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