

Combining ArcGIS and eCognition for More Effective Stand Delineation

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Goals

- To create a new and more correct stand delineation for large areas of forest.
- To calculate values for forest parameters such as tree height, basal area and timber volume and their mean values with high accuracy.

Criteria

- Large project areas – high level of automation

Who Are We?

- COWI Forest and Mapping
- Kongsberg, Norway.
- Develop and produce products for forestry
- Mainly in Scandinavia
 - but also for example South America and Asia



Problem

Picture

- Check geometry and prepare table structure
- Adjust stand borders automatically
 - Pattern recognition
 - Neighbor analysis
- Creation of micro stands and grid
- Tree height means and percentiles
- Adjust new stands to old property borders
- (Gridlevel calculations)
- Aggregation of calculated values from grid to stand level
- Lonely tree analysis
- Automate!

Softwares



"eCognition Developer is a powerful development environment for object-based image analysis. It is used in earth sciences to develop rule sets /.../ for the automatic analysis of remote sensing data."



"Anyone can put geographic knowledge to work in government, business, science, education, and media using ArcGIS."

Software Comparison

eCognition

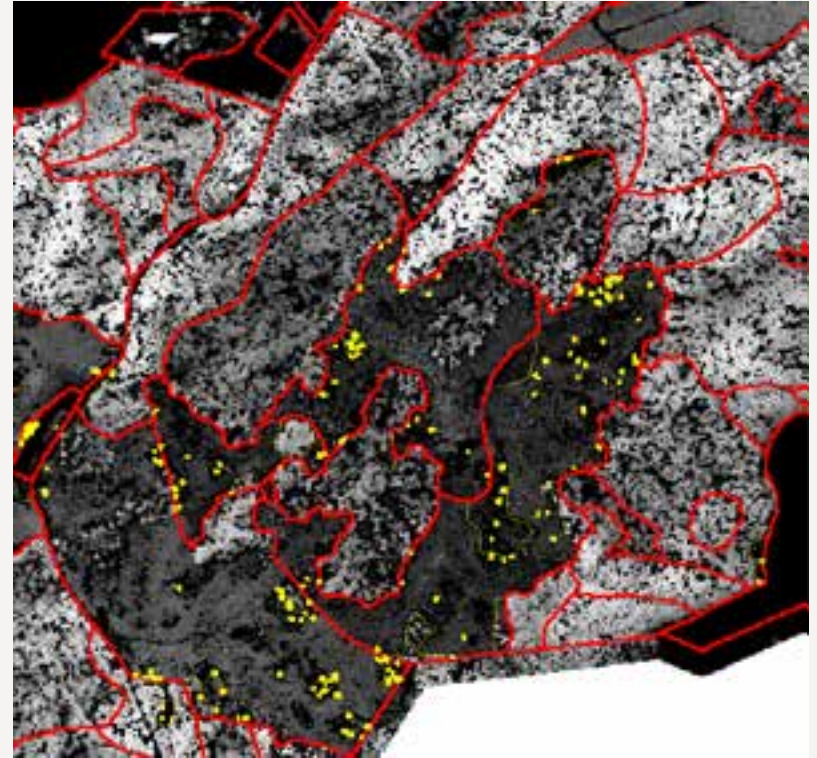
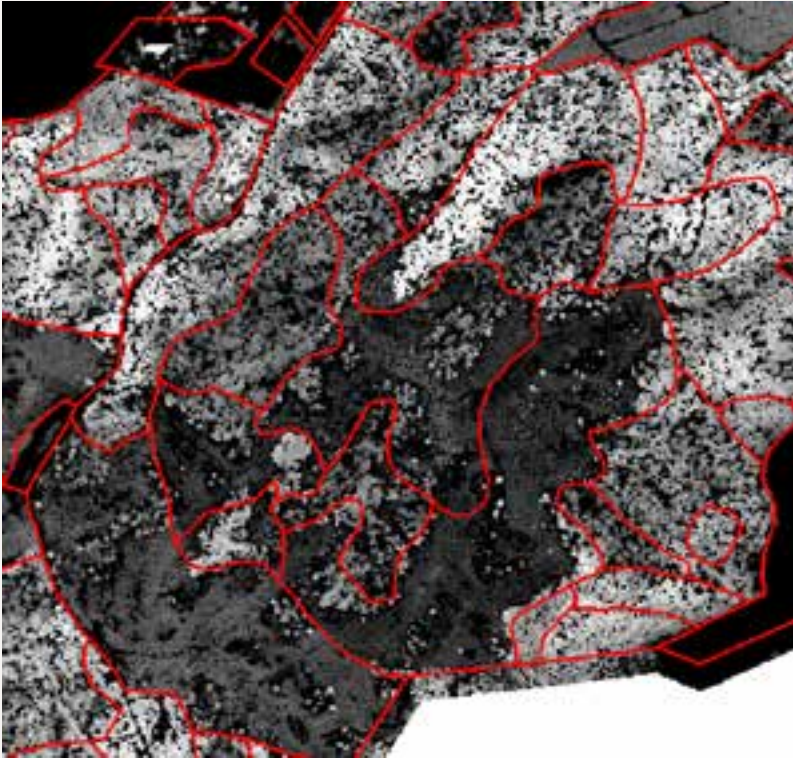
Raster Creation (Limited)
Raster Analysis
Vector Creation (Limited)
Vector Analysis (Limited)
Pattern recognition
Neighborhood Analysis
Rule set

Single parts

ArcGIS

Lidar
Raster Creation
Raster Analysis
Vector Creation
Vector Analysis
Pattern recognition (Limited)
Neighborhood Analysis (Limited)
Single Tools
Model builder
Scripting (python)
Topology tools
Tables
Multipart capability

Segmentation and Classification - eCognition



Thank you!

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