



# MaterialMAP from TerraSim®

Classify imagery into a surface material map for mobility and sensor simulation

MaterialMAP is a low-cost, stand-alone application that creates surface material maps from imagery, while simultaneously understanding the unique attribution requirements for multiple modeling and simulation runtimes. These material maps can be used in simulation runtimes to determine entity mobility and routing, runtime visual effects, and sensor simulation.

## Key Features:

- » Import imagery in standard formats, including ECW, GeoTIFF, JPEG, and PNG
- » Support color and multispectral image classification
- » Create sample classifications and reuse spectral class properties with new imagery
- » Develop alternative classification strategies and rapidly visualize intermediate classification results
- » Use MaterialMAP's processing history to select the best classification results
- » Export classified imagery to vector and image formats, including ESRI Shapefile, GeoTIFF, PNG, and JPEG
- » Export material maps for constructive simulations (OneSAF OTF, JointSAF CTDB) and serious game runtimes (VBS2, Steel Beasts, Havok Vision Engine)

## How Do I Use MaterialMAP?

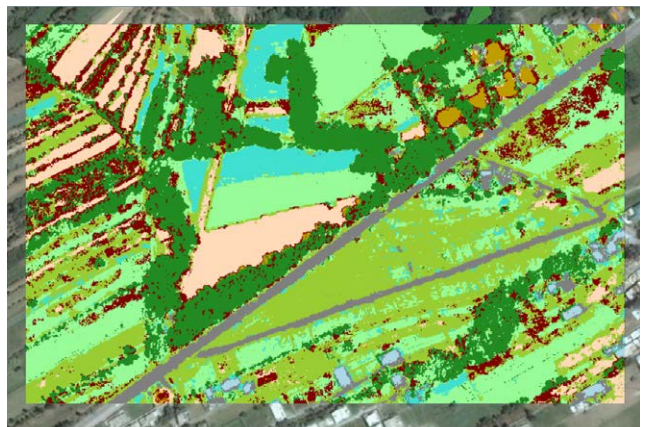
- » Interactively create training samples for surface materials visible in the imagery
- » Compute advanced spectral signatures from material training samples
- » Test material classification robustness using multiple sub-regions of the imagery
- » Automatically classify the entire image using advanced spectral signatures to create a complete surface material map
- » Export to simulation runtime formats

## Why MaterialMAP?

- » Rapidly create realistic warfighter training simulations with accurate surface material and sensor support
- » Easily export to GIS formats; integrate with sensor simulations using pixel-level materials or material-encoded textures
- » Advanced material classification processing
  - Smooth - Reduce image noise
  - Generalize - Eliminate small regions
  - Aggregate - Combine class maps



*Interactively create simple training samples for classification*



*Rapidly produce surface material classifications*



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Input satellite imagery into MaterialMAP

The screenshot shows the MaterialMAP software interface. On the left is a satellite image of a rural area with fields and a road. On the right are two panels: 'Feature Manager' and 'Classified Layer Properties'.

**Feature Manager**

Enable	Class Name	Color	Sampl...	F
<input type="checkbox"/>	Low Grasslands		15	12
<input type="checkbox"/>	Clay_Dirt		7	15
<input type="checkbox"/>	Crop 3		14	18
<input type="checkbox"/>	Crop 2		11	46
<input type="checkbox"/>	Crop 1		11	53
<input type="checkbox"/>	Canopy		8	18
<input type="checkbox"/>	Road_Asphalt		43	20
<input type="checkbox"/>	Tin_Roofs		45	10
<input type="checkbox"/>	Tile_Roofs		24	53

**Classified Layer Properties**

Classified Layer Properties

Name: gmlkhd

ClassList

Class	Name
Class	Low Grasslands
Class	Clay_Dirt
Class	Crop 3
Class	Crop 2
Class	Crop 1
Class	Canopy
Class	Road_Asphalt
Class	Tin_Roofs
Class	Tile_Roofs

ImageInfo

ImageType	
BandCount	3
Band	0
Band	1
Band	2

Image Info

Notes

Add notes related to the classified image layer.

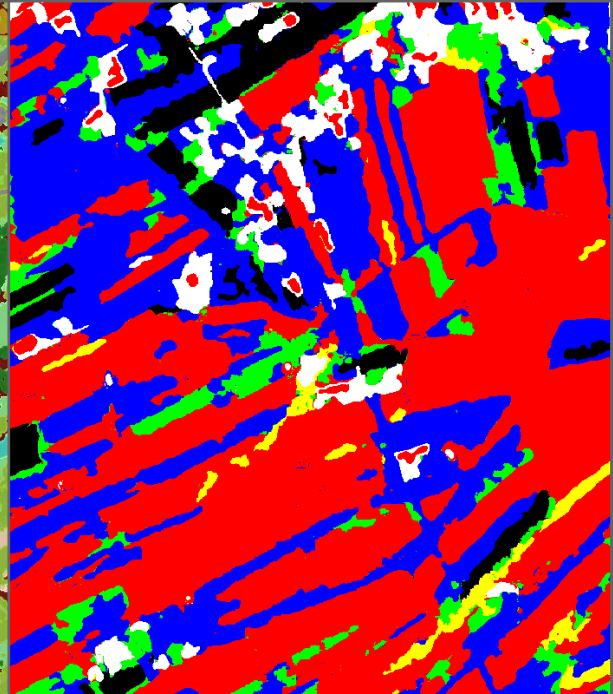
Input Manager

Name	Classify	Order

Output material classifications



Create runtime material maps



Source Data Preparation