



# High-Resolution Land cover Mapping of Geneva Canton

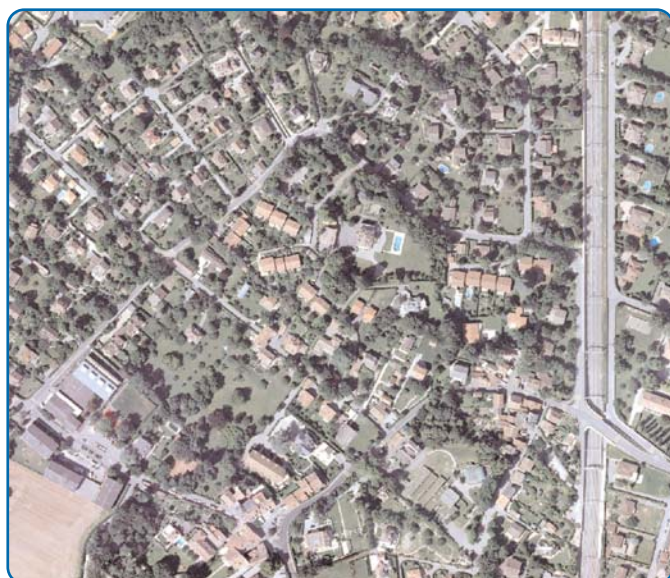
Expertise in image analysis developed at GRID-Europe is being applied locally, at a very high level of resolution and in partnership with the private sector and Cantonal administration.

## Background

This project developed in 2007 is part of a vast land cover mapping endeavour, commissioned by the Swiss Federal Topographic Office. Land cover maps are an important part of the National Geographical Data Infrastructure (NGDI), in the context of the territorial information systems being developed in various cantons.

The methodology previously developed and applied in several GRID-Europe projects (IMOS in particular) was

adapted towards high-resolution mapping of land cover in the Canton of Geneva. It is based on extracting land cover objects from four-channel orthophotos, combined with a Digital Height Model and vector layers, using algorithms and criteria implemented in eCognition, a powerful, state-of-the-art image processing software. Within the consortium in charge of the mandate, GRID-Europe's role focuses on scientific support, methodology development and evaluation.



## Objectives

This is the first time that the expertise in image analysis developed at GRID-Europe is applied locally, at a very high level of resolution and in partnership with a private company. This will enhance the visibility of GRID-Europe and pave the way towards other joint ventures in environmental mapping.

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Arbre grand
Arbre petit
Buisson, arbuste
Chemin de fer
Chemin zone agricole
Domaine routier divers
Etang
Garage
Grande culture récoltée
Immeuble, entrepôt
Lac
Piscine
Prairie, pâturage
Route communale, surf. semi-perm.
Route communale, surface imperm.
Route principale
Route secondaire
Serre
Surface herbagère
Surface imperméable
Surface semi-perméable
Surface verte
Terrain de sport
Villa

## **CouvSolHR Partners**

- > Direction Cantonale de la Mensuration Officielle (DCMO)
- > Système d'information du territoire genevois (SITG)
- > Geo Data Network (GDN)
- > Swiss Federal Geo-Information center SwissTopo

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## **Upcoming Activities/Outputs**

Two distinct land cover maps will be created for each of the 48 communes in the Canton of Geneva: one representing land cover at the tree canopy level, and the other one at ground level. The 28-class legend is compatible with the official Swiss specifications, and can be easily converted into the well-known European standard CORINE land cover classes.

Thematic maps can also be derived from land cover for specific uses in hydrology, biotope protection, pedology and land development.

- > For each commune, a geodatabase containing the land cover maps, as well as meta-information on methodology applied to produce the maps.
- > A complete report on methodology, quality control and proposals for applications.

## **About GRID-Europe**

UNEP/DEWA/GRID-Europe is one of UNEP's major centres for data and information management, with a unique, "value-adding" mandate in the handling of global and regional environmental data, which in turn support the environment assessment and early warning activities of UNEP and its partners. Located in the "Maison Internationale de l'Environnement" or "International Environment House" (MIE/IEH) in Geneva, GRID-Europe serves as the unique francophone centre for the global GRID network. DEWA/GRID-Europe is supported by a "Partnership Agreement" between UNEP, the Swiss Federal Office for the Environment (FOEN) and the University of Geneva.