

# Creation of Clutter Data for Telecom RF Planning

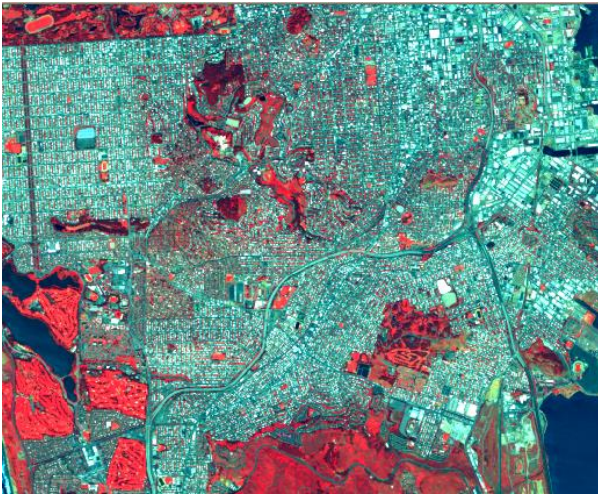


Fig.1 RapidEye Satellite Image

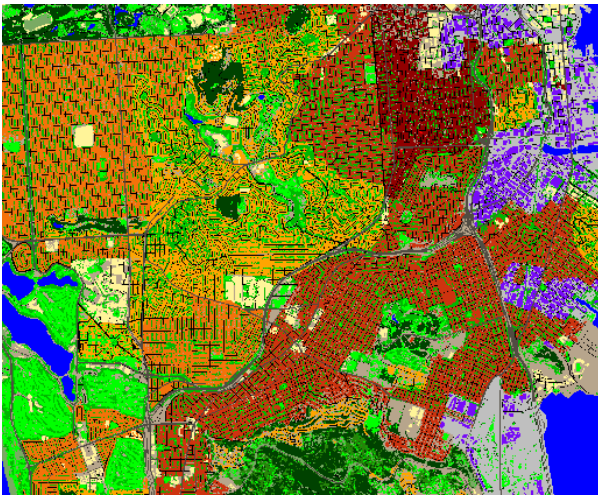


Fig2. Classified Clutter data

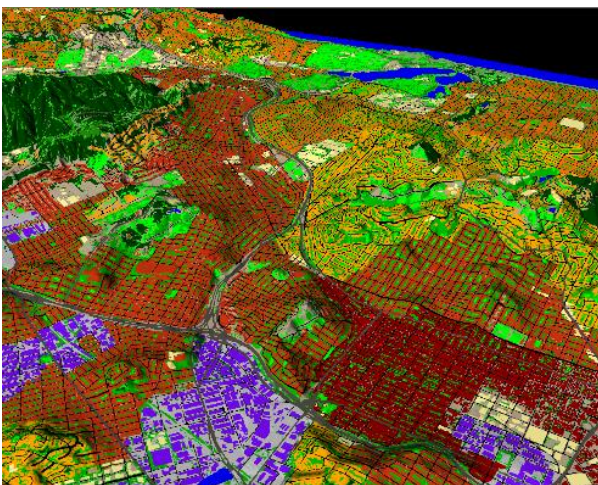


Fig.3. Clutter overlaid on Digital Terrain Model

## Business Need:

Wireless telecommunication companies need up-to-date database for placing transmission towers and to plan radio frequency for proper signal coverage for mobile users.

The business requirement was to provide some solution, which is of high quality as well as cost effective.

## Inputs Used:

Satellite Image	- RapidEye 1B image
DTM	- 10m NED data
Internet Based Information	- Google Earth

## Business Solution:

Excel Geomatics used RapidEye images at 5m resolution to create updated Land-use/Land-cover of the study area.

RapidEye 1B (Basic) imagery was orthorectified using 10m NED data supplied by the client.

Google Earth was used to identify skyscrapers in the study area. Emphasis was also given to identify 'urban open spaces' in the study area.

Clutter was classified into following 20 classes-

Class Names	Color
Urban- skyscrapers	Red
Urban- medium height	Dark Red
Urban- low height	Orange
Urban- residential	Light Orange
Dense residential	Yellow
Residential	Pink
Commercial	Light Yellow
Industrial	Purple
Surface Streets	Black
Freeways and Highways	Dark Grey
Airport runways	Light Grey
Airport buildings	White
Industrial open	Light Grey
Open in urban	Light Brown
Open bare ground	Light Green
Grassland	Bright Green
Low vegetation	Dark Green
Urban/ Residential trees	Light Green
Forest	Dark Green
Water	Blue

## Project Shipment:

The following shipments were made-

- i) Clutter data with and without road
- ii) Ortho-rectified Satellite image

