



ICGC Solar Radiation

potencial solar fotovoltaico y térmico



ICGC

Institut
Cartogràfic i Geològic
de Catalunya



Generalitat
de Catalunya

smart city

subsidence



Target:
Early warning,
accuracy, trends,
affordable

Radar

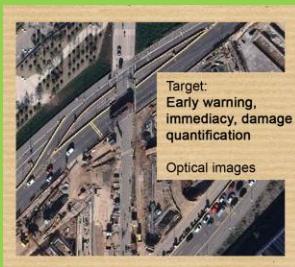
land changes



Target:
Deforestation, land use,
land registry, dumps

Optical and hyperspectral
imagery
(airborne or satellite) and
LIDAR.

rapid ortho



Target:
Early warning,
immediacy, damage
quantification

Optical images

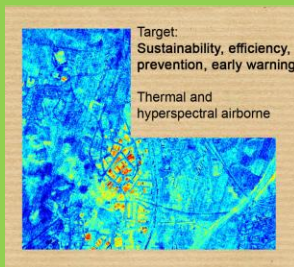
agriculture/forestry



Target:
Precision farming,
natural resources,
productivity, land
registry, forestry
studies

Hyperspectral (airborne
or satellite) and LIDAR.

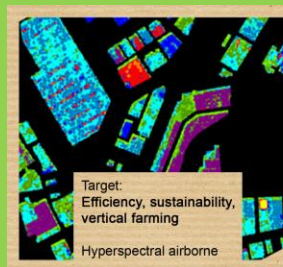
energy leaks



Target:
Sustainability, efficiency,
prevention, early warning

Thermal and
hyperspectral airborne

covers



Target:
Efficiency, sustainability,
vertical farming

Hyperspectral airborne

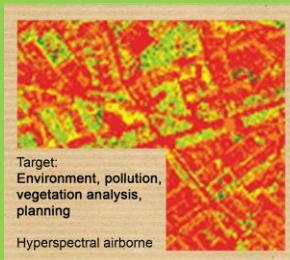
luminance



Target:
Light pollution,
efficiency, sustainability,
light management

Hyperspectral airborne

urban green



Target:
Environment, pollution,
vegetation analysis,
planning

Hyperspectral airborne

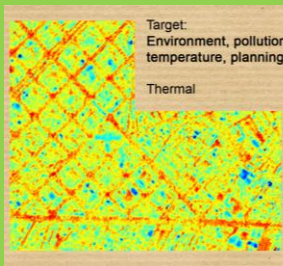
3D models



Target:
Land registry, planning,
tourism, efficiency

Oblique aerial images

heat islands



Target:
Environment, pollution,
temperature, planning

Thermal


coast evolution



Target:
Prevention,
economic impact

LIDAR

data dissemination



Target:
Instamaps, publishing,
online services
(WMS...), view,
download, styles,
formats, apps

Any data

solar



Target:
Energy, sustainability,
planning

LiDAR

leading the energy transition



500K solar jobs in Europe by 2030

20% Europe's electricity demand powered by solar by 2030

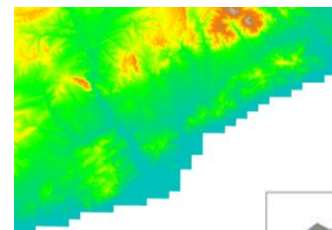
30GW solar market growth in Europe by 2022

32% European renewables target (clean energy package)

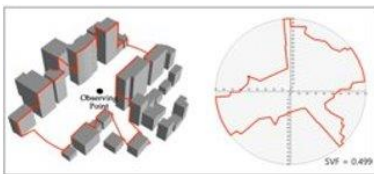
Solar energy



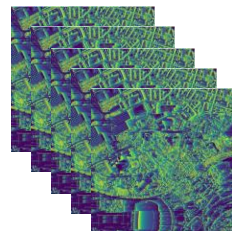
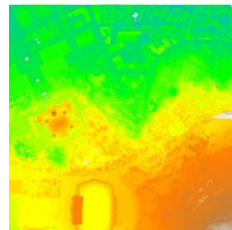
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DTM 15 x 15 m



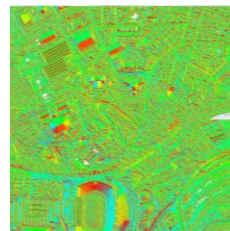
horizon_dtm



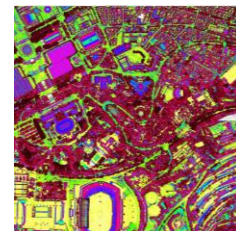
horizon_dsm

horizon

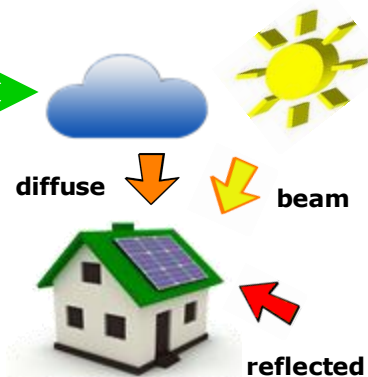
DSM



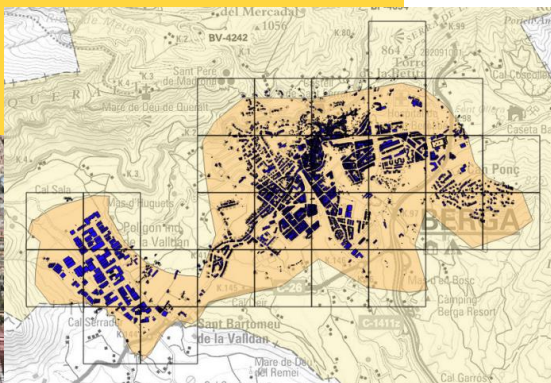
aspect



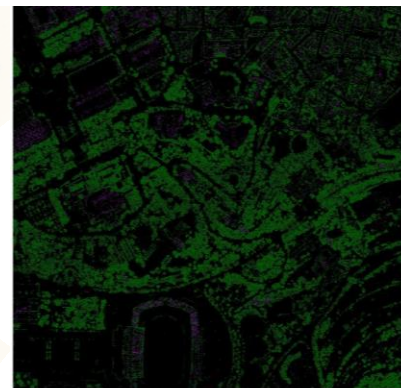
slope



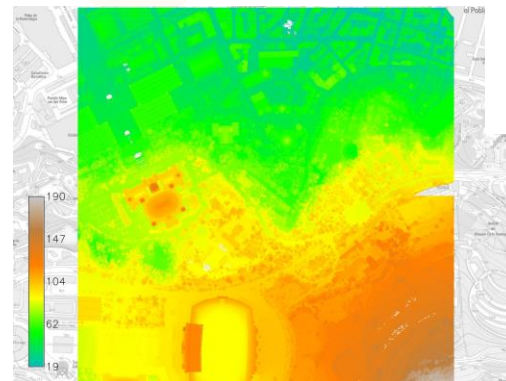
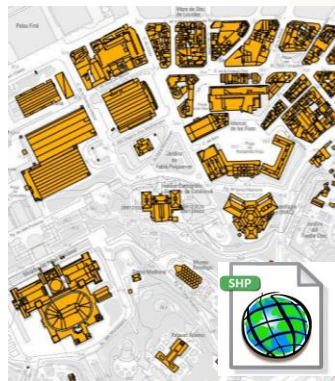
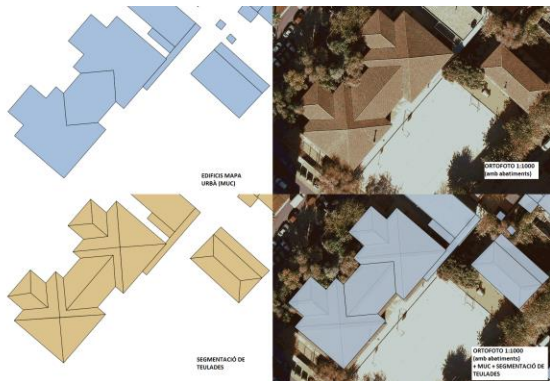
LiDAR (4pts/m²)



artefactos

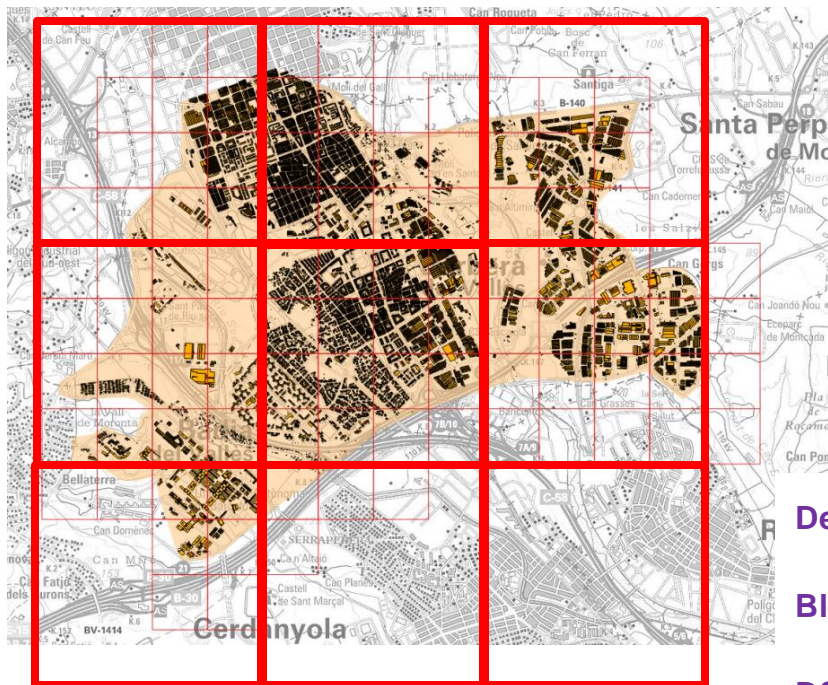


cubiertas



DSM

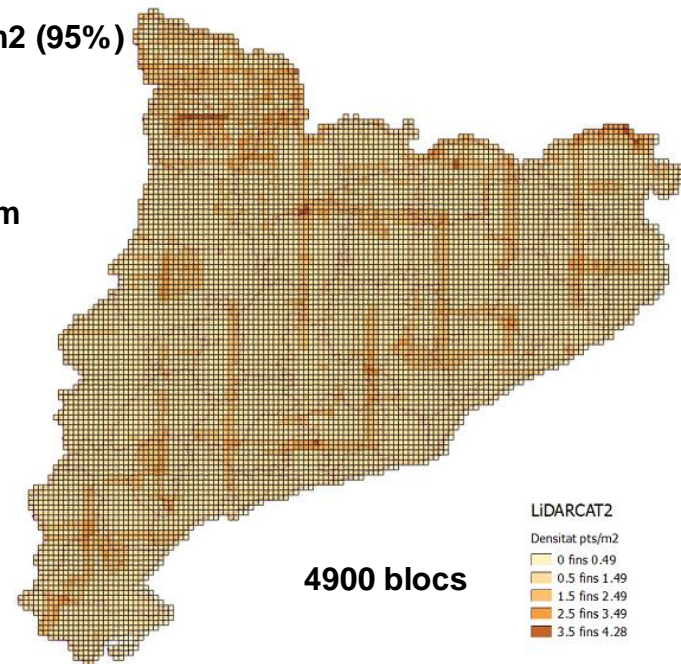
LiDAR – densitats / blocs



Densitat 0,5 pts/m² (95%)

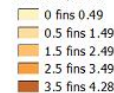
Blocs 2 x 2 km

DSM, DTM 2 x 2 m



LiDARCAT2

Densitat pts/m²



4900 blocs

Densitat 4-6 pts/m²

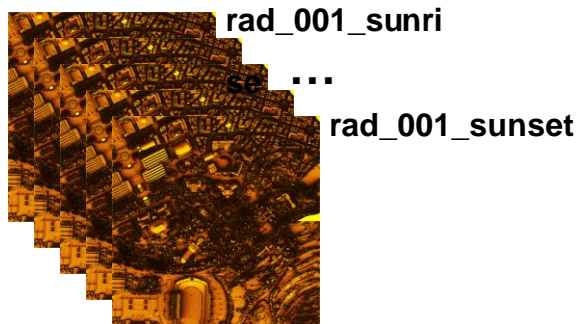
Blocs 500 x 500 m

DSM, DTM 50 x 50 cm

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2h 30min / bloc



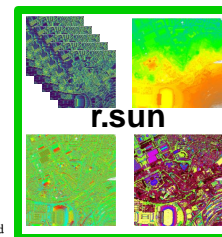
for  in 

for dayW in 

for time in (sunrise, sunset)



GRASS GIS
Bringing advanced geospatial technologies to the world





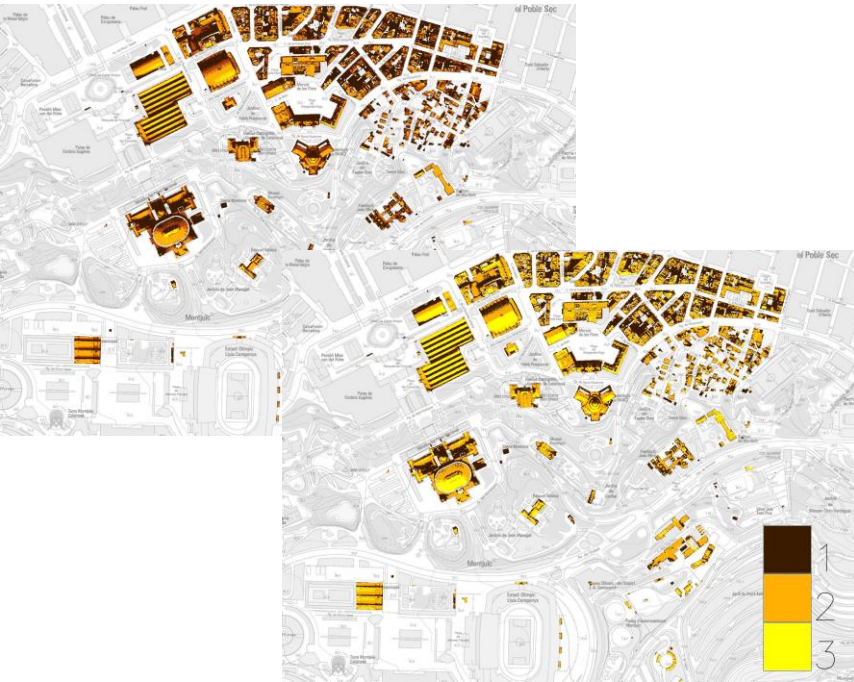
<https://youtu.be/03wifmNK6EI>



outputs ICGCSolarRadiation

- rad_[glob / beam]_DDD_hh
- rad_[glob / beam]_edfmsk_vgmsk
- rad_glob_edfmsk_vgmsk_idoFV
- rad_glob_edfmsk_vgmsk_idTS
- PlaDeTeulades.shp

**calculadora / visor web
(instamaps, storymaps)**

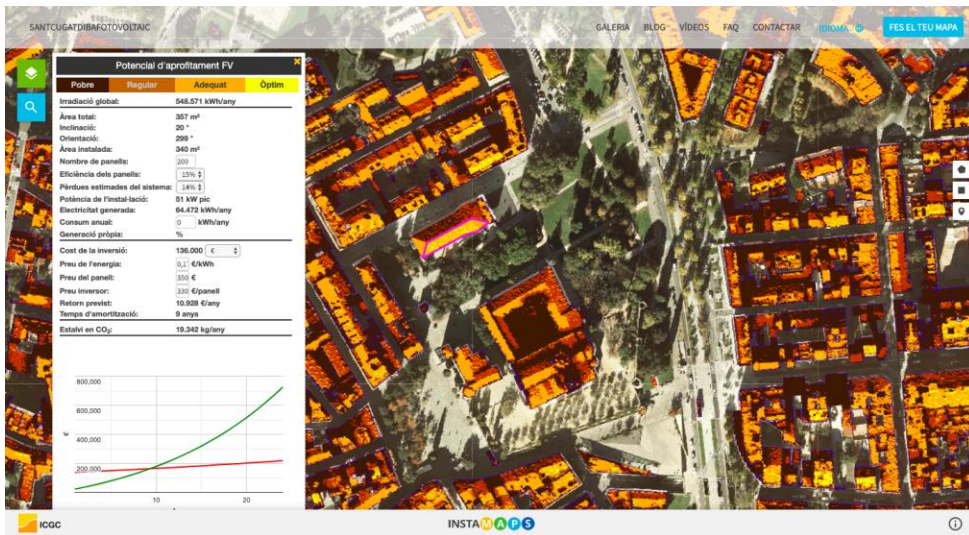


<https://eines.icgc.cat/storymaps/html/visor.html?id=adc92f70-6b02-11e8-991e-558f1d760a4b>



<https://youtu.be/NPzDfERX8IY>





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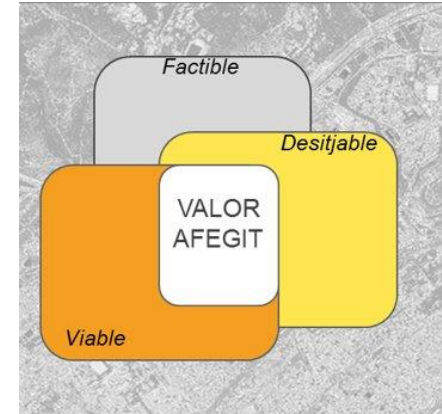
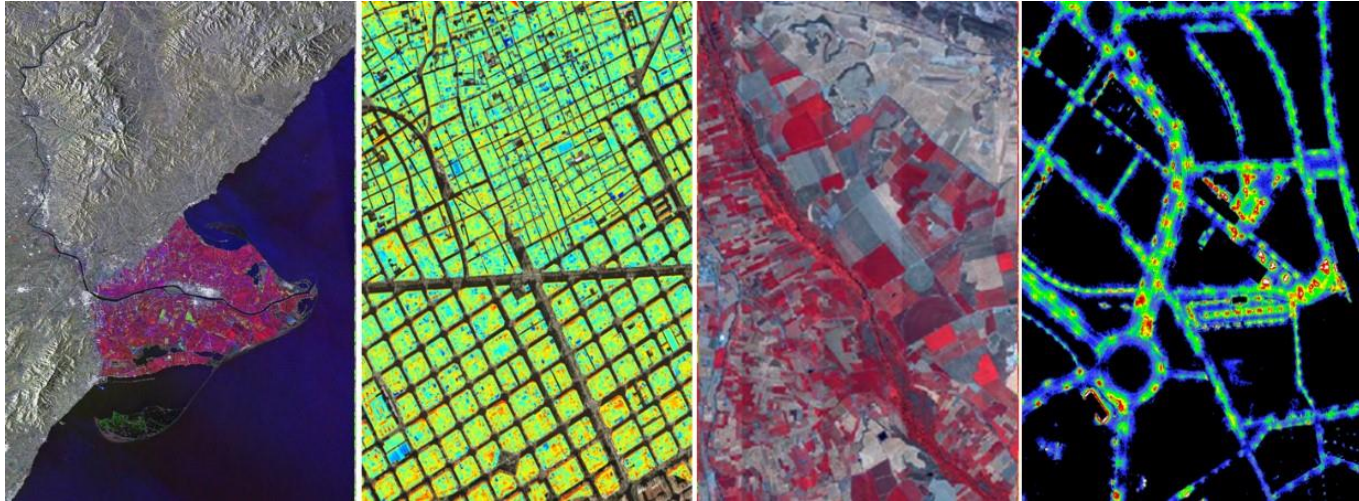
twitter.com/ICGCat

facebook.com/ICGCat

Tel. (+34) 93 567 15 00

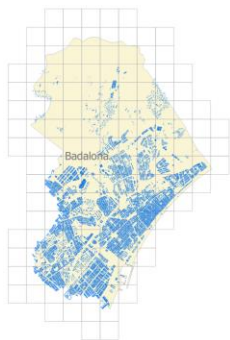
Fax (+34) 93 567 15 67

sostenibilidad urbana



existing data + new data = value added geosolutions

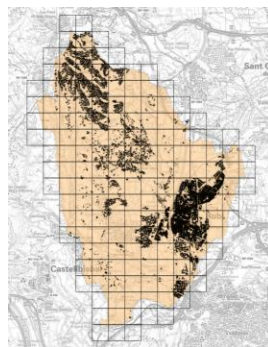
LiDAR - blocs



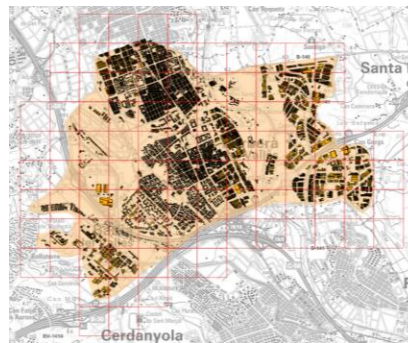
150 blocs



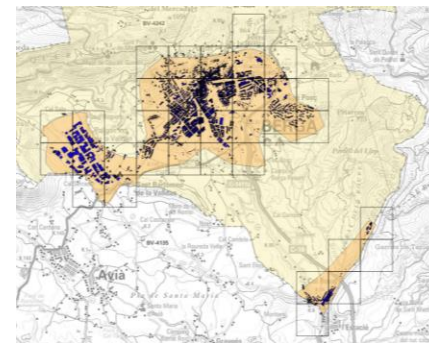
92 blocs



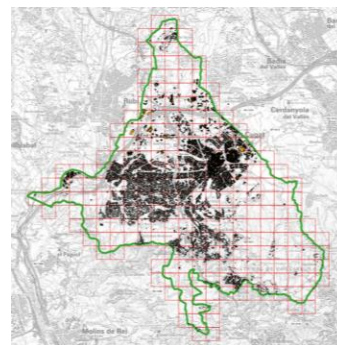
170 blocs



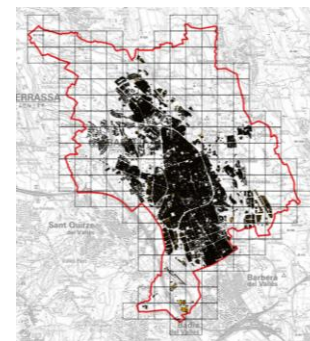
99 blocs



35 blocs



244 blocs



202 blocs

visors web

distribución, consulta I analisis

Sabadell <https://eines.icgc.cat/storymaps/html/visor.html?id=72b6fb70-f7a1-11e8-a060-033192c22cea>

Esplugues <https://eines.icgc.cat/storymaps/html/visor.html?id=37a6c8c0-f7a2-11e8-a060-033192c22cea>

Berga <https://eines.icgc.cat/storymaps/html/visor.html?id=c3b3fc50-f7a4-11e8-a060-033192c22cea>

Sant Cugat <https://eines.icgc.cat/storymaps/html/visor.html?id=0cc8ff40-f79f-11e8-a060-033192c22cea>

Badalona <https://eines.icgc.cat/storymaps/html/visor.html?id=3429d0d0-25c9-11e8-b70f-9ff4ea492e48>