Land monitoring service for Geomatics and Urban Planning

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The land theme is divided into various components. The Pan-European component provides information about the Land Cover and Land User (LC/LU), its changes and characteristics.
Corine Land Cover

Land Monitoring
Corine Land Cover
EEA: Green infrastructure indicators

Indicators to characterise green infrastructure at the city level and in the peri-urban area

Copernicus Land Monitoring Service provides:
- **Land Use/Land Cover** information
  Indirectly related to heat emitted by surface coverage and evapotranspiration
- **Measurements of Land Surface Temperature (LST)**
Near real time

- Copernicus Contributing Missions
  Meteosat Second Generation provides low resolution (3km) measurement every 15/30 minutes.
  MetOp-A and -B can provide 2-4 measurements per day at low resolution (1km)
- Sentinel-3 mission
  Full constellation will provide a measurement about every day at 1km spatial resolution

After 1 day

- Copernicus Land Monitoring Services (CLMS)
  The Global Land Service provides the following LST-based products:
    - LST: hourly LST from instantaneous observations
    - LST10-DC: 10-day Land Surface Temperature with Daily Cycle
    - LST10-TCI: Thermal Condition Index with a 10-day composite of Land Surface Temperature.
Applications of Land Surface Temperature

- Land Surface Temperature can be considered a proxy for air temperature in cities: higher values usually correspond to higher values of air temperature.
- Estimation of the Surface Urban Heat Island (SUHI) effect.
- Modelling of the surface energy balance for obtaining air temperature. Example inputs are: LST, Weather conditions, Land coverage, Orography, etc.
- Identification of “hotter areas” (hot spots) -> urban planning.
- Long time series -> effects of city growing and/or climate changes.
Temporal monitoring: day

30 Jul 2016
31 Jul 2016
1 Aug 2016
2 Aug 2016
3 Aug 2016
4 Aug 2016
5 Aug 2016
7 Aug 2016

Day surface temperature
Common colour scale
Temporal monitoring: night

Night surface temperature
Common colour scale
High Resolution Layers

Imperviousness

Land Monitoring
Imperviousness and soil sealing
Land Monitoring

Imperiousness and soil loss

Source: Rapporto consumo di suolo ISPRA 2020
Main changes in northern Italy

Source: Rapporto consumo di suolo ISPRA 2020

Web App for Soil Sealing Monitoring

Powered by
Smart M.Apps
Thematic hotspot monitoring in coastal zones
New Product Update 2019-20

Implemented by
planetek italia
GeoVille
TELESPAZIO
planetek hellas
Land Use – Land Cover of European Coasts
Coastal Zones Status map 2018
Coastal Zones Status map 2012
European Ground Motion Service

Land Monitoring
InSAR based Ground Motion monitoring
EGMS based applications and use cases
There are 99 alarms and 3476 warnings in 48696 selected segments.
There are 39 segments to inspect and 171 segments to assess out of 31913.
Thank you.

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