1.1 Module 4: Copernicus Land Monitoring Service

1.1.1 Submodule B: Combined value of HR Layers and 3D visualisation

Executive summary

The HR Layers of the CLMS Pan-European component provide information on specific land cover characteristics, like imperviousness, forest cover, grasslands, wetlands and permanent water bodies, at 20 metre spatial resolution for the reference year 2012. They are complementary to land cover datasets like CORINE and cover the whole of Europe.
This demo aims to show the potential of the EU-DEM in combination with HR Layers, for cartography, modelling, spatial analysis and image pre-processing. This will be shown by overlaying the HR Layers on the EU-DEM, creating a 3D visualisation that facilitates analysis and interpretation. Freely available ancillary datasets from EEA and Eurostat enable further applications.

This module consists of a Power Point Presentation (PPT) and a video in *.wmv format.

Script

1. Go to the Copernicus Land Monitoring Service product portal on land.copernicus.eu and click on Pan-European.
2. Select High Resolution Layers and download all five HRLs with reference year 2012 at 20m spatial resolution.
3. Go back to Pan-European, then click on Reference Data, select the EU-DEM and choose EU-DEM v1.1. The Map Viewer opens automatically. Go to **Download** and select the tiles of your interest. Then download to your PC.
4. Go back to Pan-European. Click on Image Mosaics and select Very High Resolution. Then click on True color image 2012. The Map Viewer opens. Click on **Web services** and then on WMS. The GetCapabilities XML file opens. Copy the link to the Online Resource (http://copernicus.discomap.eea.europa.eu/arcgis/services/GioLand/VeryHighResolution2012/MapServer/WmsServer?) for later integration in your GIS.
5. Open the EEA website http://www.eea.europa.eu/, navigate to Data and Maps, click on All items and type 'EEA Reference grid' to the **search bar**. Then click on the dataset EEA reference grid and download the grid for your desired location (e.g. Greece).
6. Visit the website of Eurostat at http://ec.europa.eu/eurostat/en and navigate to **Data**, then click on >GISCO: Geographical Information and maps.
7. On the left side, click on +REFERENCE DATA to get an overview of the available geodata. Download Nuts 2013, Airports 2013 and Ports 2013 as ESRI shapefile in scale 1:1,000,000.
8. Unzip all downloaded geodata and integrate the data and layers in your GIS. Order them in the following sequence:
    1) Airports 2013
    2) Ports 2013
    3) EEA refrence grid 1 km

4) NUTS 2013
5) HRL IMD 2012 20m
6) HRL PWB 2012 20m
7) HRL WET 2012 20m
8) HRL NGR 2012 20m
9) HRL FTY 2012 20m
10) VHR True colour 2.5m Image Mosaic 2012
11) EU-DEM

9. Set all “0” and “254” raster values in the HRL products to transparent/hollow. Subsequently, set the raster value “255” (the background) to a suitable colour of your choice (e.g. dark blue).
10. Do the same for all polygon vector datasets and choose an appropriate symbology for all vector datasets.
11. Switch in the 3D view to get an impression of the combined view of layers
12. Create a flight line for a region of your interest (e.g. the Alpes or Greece) and record the flight as a video.
13. Play the video.