

European Urban Atlas

Customer Statement

"On the level of the 'Metropole district Lille' there is an urgent need for cross-border data. The product will be used for joint projects (transport, economic and regional development, urban development) and as an instrument to show a common identity.

The data will also be of great value to our spatial planning department, our environmental department and for the development of site specific projects (e.g. industrial terrains). The compatibility of classification and minimum mapping units with the tasks of our organization is quite good." (Intercommunale Leiedal).

as well as change detection algorithms are used for the generation of the actual urban land cover/land use information. SPOT-5 satellite images serve as basic input data. Subsequently, image analysis results are controlled and manually improved with the help of supplementary information provided by city authorities.

Aerial photography samples are used by an independent external validation team to validate the accuracy. The basic urban land use information is enhanced by urban indicators such as the degree of sealing (different levels of impervious areas) based on NDVI and supplementary data for detailed and accurate up-to-date sealing mapping (up to 11 classes).

Benefits

The Urban Atlas - a land use change monitoring product - offers a sound basis for spatial statistic calculations and the revision of urban plans. Urban planners, politicians, environmentalists and other public stakeholders can make use of this in the planning and management of cities.

Concrete examples are:

- Monitor the status of a Master Plan development indicating distance to services, sizes of green areas, etc;
- Response to rising percentages of sealed areas;
- Indications of where to stop building activities due to increasing sealing levels;
- Support for flood prevention due to increased surface run-off.

Outlook

The Urban Atlas, once produced by DGRegio, will provide a European overview of urban land use patterns and the possibility to track changes in the future, which so far has not been available. The only source of land use or land cover information that is EU wide is CORINE which was primarily designed to measure natural areas and agricultural land. Due to the coarse resolution and high density thresholds, CORINE fails to capture large parts of urban areas.

The land use maps will also be of interest to the regions and/or cities as they will be able to compare their land use patterns with that of other European cities. The Urban Atlas offers to the those leading with land management (Urban planners, politicians, environmentalists and other public stakeholders) the further opportunity to build more detail on top of these maps in order to: monitor the status of a Master Plan development indicating distance to services, sizes of green areas, etc; assess adequate response to rising percentages of sealed areas; support flood prevention due to increased surface run-off.

Service Providers

- Indra Espacio/ES (service coordinator)
- Eurosense/BE
- H. G. Geo Data Solutions/DE
- Planetek/IT

Reference Users

- European Commission - DG Regio (EU)
- Comunidad de Madrid (Direccion General de Urbanismo y Planificacion Regional) (ES)
- Junta de Andalucía - Consejería de Medio Ambiente (ES)
- Intercommunale Leiedal (BE)
- Ministero dell'Economia e delle Finanze (IT)
- Provincia di Treviso (IT)
- Sächsisches Landesamt für Umwelt und Geologie (DE)
- Landeshauptstadt München - Referat für Gesundheit und Umwelt (DE)
- Thüringer Landesanstalt für Umwelt und Geologie (DE)
- Stadt Jena (DE)
- Regione del Veneto (IT)
- Junta de Extremadura (ES)
- Instituto Geográfico Nacional (ES)
- Provincia de Treviso (SITI - Sistema Informativo Territoriale Integrato) (IT)
- Der Senator für Umwelt, Bau, Verkehr und Europa Bremen (DE)
- City of Tallin (EE)
- Stadt Wien (AT)
- City of Vilnius (LT)
- City of Turku (FI)
- City of Edinburgh (UK)
- City of Dublin (IE)
- City of Bratislava (SK)
- Prague City - The City Development Authority (CZ)
- Regional Authority of the Pilsen Region (CZ)



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Urban Atlas Madrid

Users

This product is of great value to the European administrations, like DG Regio and the EEA on the one hand, and city governments and the related spatial planning departments on the other hand.

User Needs / Drivers

In order to encourage more sustainable development in urban conglomerations well as the urban fringe, and to evaluate the compliance and success of planning measures, detailed knowledge of urban land use is essential for monitoring and analysing changes on a geolocated basis. A key service driver for a pan-European Urban Atlas is the Urban Audit programme jointly initiated by DG Regio and DG Environment. The Urban Audit currently collects information on the living conditions in cities within the European Union and the candidate countries (EU27).

Service

The European Urban Atlas is scientifically sound, proven and trusted as it builds on CORINE/MOLAND nomenclature, the standards of European land use/land cover product mapping and statistics. Semi-automated processing chains



Cities Mapped

2005/2006:

- Madrid,
- Weimar-Jena,
- Munich,
- Metropole Area Lille,
- Bari,
- Venice Region,
- Naples,
- Oristano

2007/2008:

- Bremen
- Bratislava
- Province of Treviso
- Belluno
- Verona
- Vicenza
- Sevilla
- Badajoz
- Costa del Sol (Malaga)
- Turku
- Vilnius
- Edinburgh
- Dublin
- Prague
- Pilsen

Product

20 classes (16 Urban, and 4 non-urban) mapped at 0.25 ha: minimum mapping unit scale of use 1:10.000 - 1.25.000

Input Data

- SPOT-5 (10m multispectral and 2.5 m panchromatic pixel resolution)
- Other ancillary data

Methodology

- Urban Atlas maps: Pre-processing, geocoding, segmentation, classification, visual interpretation, accuracy assessment
- Urban Atlas indicators: Segmentation, Pre-classification, NDVI, calibration, visual interpretation, accuracy assessment

Type and Format of Output

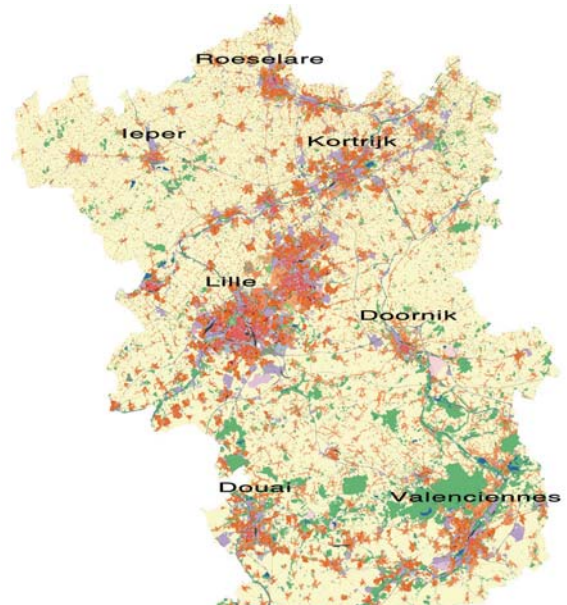
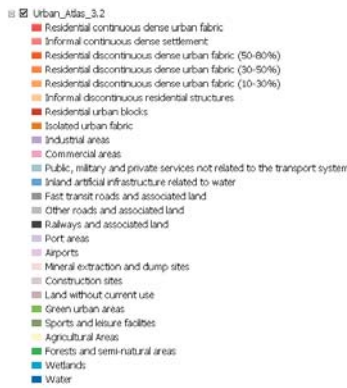
GIS-file (all standard formats), analogue maps on request

Service Portfolio & Specification Details

<http://www.gmes-gseland.info/sport/>

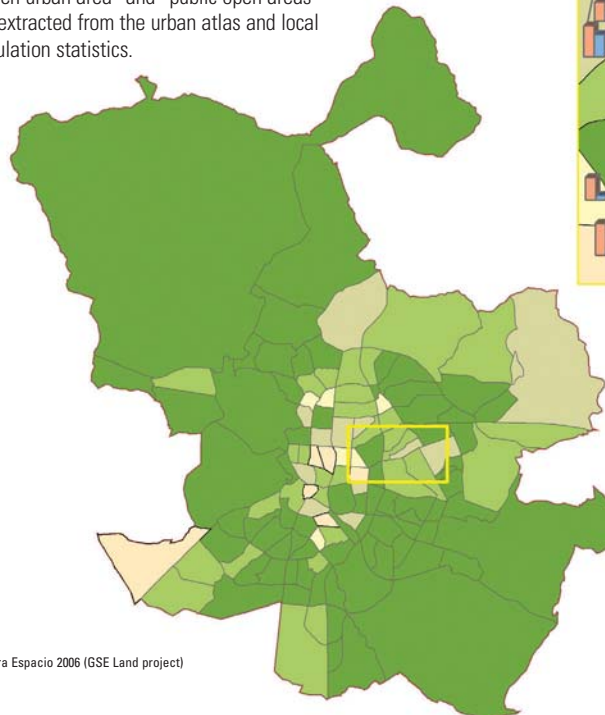
Urban Atlas Lille Metropole Area

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Urban audit indicators

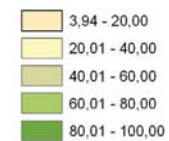
"green urban area" and "public open areas" are extracted from the urban atlas and local population statistics.



© Indra Espacio 2006 (GSE Land project)



Percentage of citizens living within 300m from POA



Urban Atlas Service Providers



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