

INDRA PROCESSES SATELLITE IMAGES TO ASSIST EUROSTAT WITH THE PREPARATION OF STATISTICS OF LAND USE AND COVER AREA IN EUROPE

- **Indra processes 900,000-point aerial and satellite images that covers the continent to determine the land type they map, covering 4.5 million square kilometers and 28 countries**
- **This mesh provides the basis for compiling statistics on land use and cover in the EU, as part of the Land Use/Cover Area frame Survey (LUCAS)**
- **These statistics are used to draft better policies for environmental protection, water and forest management, urban planning and transportation, agriculture, and for monitoring climate change**
- **The LUCAS grid of points is used to check and validate data captured by the Sentinel satellites in the Copernicus program**

Madrid, October 18, 2017. Indra has taken over responsibility for processing the satellite and other aerial images from all over Europe that provide the basis for the statistics that Eurostat compiles on land use and cover across the continent (Land Use/Cover Area frame Survey, or LUCAS).

These statistics are used as the basis for the work of the European Commission, organisms and governments related with environmental protection, water and forest management, urban planning and transportation, agriculture policies and for monitoring the climate as well as biodiversity.

Indra worked on the project with Space4Environment and LuxSpace, with the latter company acting as the consortium coordinator.

The mission of the three companies consisted in creating a master grid of points from which to compile the statistics. The grid is made up of images taken every 2.2 kilometers across the entire EU using satellites and other aerial media. In total, this mesh covers an area of 4.5 million square kilometers and 28 countries.

Indra's role consisted in processing the images to classify the 900,000 points or images and determine the type of land in question. The statistics differentiate between 10 categories, including cropland, woodland, bare land and built-up land.

To carry out this task, Indra harnessed its technical and technological capabilities to work with vast volumes of data, using specialized equipment and advanced technology solutions in the process.

The statistics compiled by the LUCAS project offer harmonized and consistent information for the whole of the EU, therefore avoiding the need to resort to statistics drawn up by different sources using different methodologies, which often makes it very difficult to compare different points.

This allows for evaluating the impact of agriculture on the environment, studying the efficiency with which territorial resources are used, and implementing policies to promote a sustainable economy.

Eurostat data responds to questions like the percentage of cover occupied by buildings, roads and artificial spaces throughout Europe; the area taken up by forests and how these are distributed by country; and which territories have larger water reserves and in which these are scarcer.

Given the generation of these statistics every three years, it is possible to analyze changes in parameters and detect whether forest mass decreases and agricultural areas expand, or whether soil quality diminishes or improves, for example.

Different European Commission organizations use it to assess the impact of crops on the environment, study resource efficiency indicators (to establish policies to promote a sustainable economy), and analyze and monitor climate change.

The grid of points created by the consortium to which Indra belongs also has significant applications for all the users and companies that exploit the data supplied by Copernicus, the European Earth Observation Program and one of the most important projects ever undertaken by the European Commission. Since it covers the whole of Europe, the LUCAS grid of points is used to check and validate data captured by the Sentinel satellites in the Copernicus program, therefore helping to confirm their accuracy.

About space4environment

space4environment has been established in 2007. The fully independent company focuses on its core interest: adding the environmental dimension to Earth observation in the land domain, respectively “using space data to provide space for the environment” as expressed in the company’s motto. By close cooperation with its customers space4environment aims at optimizing the value of their spatial data and information. Besides user requirements engineering and quality assessment of land related products, the company focuses on thematic assessments in support of European environmental policies (e.g. Biodiversity Strategy 2020 and its targets, Land related resources efficiency, Urban Thematic Strategy).

In the past, space4environment already supported the analysis of the LUCAS nomenclature and a proposal for adaptation of the nomenclature in view of its use by the Copernicus land monitoring service. In this project, space4environment was responsible for the collection of the aerial photographs in 27 countries, the programming of the image interpretation software, the project database as well as the preparation of the aerial images for use in the software.

About LuxSpace Sarl

LuxSpace Sarl of Luxembourg is an affiliate of OHB SE (Prime Standard, ISIN: DE0005936124), one of the three large space-systems companies in Europe. LuxSpace employs 43 high skilled personnel and provides know-how in the fields of space system engineering, micro satellite manufacturing, satellite simulator software development, communication subsystems for geostationary satellites and space based service application development. LuxSpace is also a recognised leading European partner in the domain of space-borne AIS (SAT-AIS).

Since 2006 LuxSpace is active in the European LUCAS survey providing technical assistance in the preparation and implementation of this EU wide field survey to Eurostat. In this project LuxSpace led the consortium to update the stratification enabling the sampling of LUCAS points to be visited in the next campaigns.

About Indra

Indra is one of the main global consulting and technology companies and the technology partner for core business operations of its clients businesses throughout the world. It offers a comprehensive range of proprietary solutions and cutting edge services with a high added value in technology, which adds to a unique culture that is reliable, flexible and adaptable to its client’s needs. Indra is a world leader in the development of comprehensive technological solutions in fields such as Defense & Security, Transport & Traffic, Energy & Industry, Telecommunications & Media, Financial Services and Public Administrations & Healthcare. Through its Minsait unit, it provides a response to the challenges of digital transformation. In 2016 it reported revenues of €2,709m, had a workforce of 34,000 professionals, a local presence in 46 countries, and sales operations in more than 140 countries.