

FIRST INTERNATIONAL GEOMATICS AND GEOTELEMATICS SHOW (GLOBALGEO) AND BARCELONA'S FIFTH GEOMATICS WEEK

GLOBALGEO

The First International Geomatics and Geotelematics Show, organised by Barcelona Fair, was held in the Congress Hall of Barcelona from February 11th to 13th, 2003 jointly with the Barcelona's Fifth Geomatics Week. Globalgeo is to be held biannually, and will be known worldwide.

Globalgeo is a highly specialised, monographic exhibition, addressed to a sector with good prospects: geomatics and geotelematics, which have multiple applications in the fields of cartography, surveying, information and communication, photogrammetry, intelligent transport systems, geodesy, satellite navigation, geographical information systems and remote sensing. Transport fleets management, cadastre, town planning, navigable cartography, geo-marketing, satellite navigation or people finding are some applications of these new technologies.

This show aims to be an international benchmark, where suppliers meets users, latest developments are presented and participating companies are provided with business opportunities. So far, Globalgeo will enable professionals from private enterprises, official organisms and public institutions to become familiar with the latest technologies and their applications.

Forty enterprises participated in this first edition, which received over 1,000 visitors.

The ICC was one of the participants. The following products were particularly highlighted on its stand:

- GeoVan (see ICC's Newsletter, No. 16). This was the most attractive data capture system to the public. Customers who showed an interest in the GeoVan were also informed about the terrestrial LIDAR, which will be installed in the GeoVan.
- LiDAR (see ICC's Newsletter, No. 15). The floor of the stand was covered by the hypsometry of the digital terrain model (DTM) of the Ter River's mouth up to virtually the city of Girona. It was obtained with LIDAR for the Planning of fluvial spaces of Catalonia (PEFCAT) project, and customers looking for a precise DTM showed a great interest in it.
- CASI (see ICC's Newsletter, No. 7). Despite its consolidated technology it was highly appreciated.
- TrueOrtho (see ICC's Newsletter, No. 14). This cartographic product was on display.
- Print kiosk: Hewlett Packard supplied a plotter and its consumables to the ICC so that colour orthos of the Barcelona area as well as reproductions of ancient cartography could be plotted and given to visitors in real time.

BARCELONA'S FIFTH GEOMATICS WEEK

Barcelona's Fifth Geomatics Week, organised by the Col·legi Oficial d'Enginyers Tècnics en Topografia-Catalonia, Escola Universitària Politècnica de Barcelona, Institut Cartogràfic de Catalunya and Institut de Geomàtica, was held in the Congress Hall of Barcelona Fair jointly with the First Globalgeo Show.

This new edition (a biannual meeting) covered all areas of geomatics with 120 lectures, both national (82%) and international (18%). However, special emphasis was placed on the integration of the technologies of cartography, geotelematics and navigation and their applications.

The event gathered almost 350 people, including scientists and technicians, users, academic staff, entrepreneurs, students and profes-

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First International Geomatics and Geotelematics Show (Globalgeo) and Barcelona's Fifth Geomatics Week

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Prize for the ICC

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GEOSHOW3D

On January 30th, 2003 the ICC and Geovirtual SL signed a cooperation contract to apply GeoShow3D, by means of which the ICC will basically provide its digital cartography.

GeoShow3D's general features are:

- Great management capability. It can represent a vast territory in high-resolution images. That is, thousands of hectares presented in photographic texture at 1:2,000-1: 25,000 scale in colour over a digital terrain model (DTM) with 15-30 m mesh size or higher detail. The third dimension may be obtained by relating the cartography with the DTM.
- Multilayer. The DTM may be textured with different cartographic raster layers activated at will such as orthophotos, topographic maps, hypsometric maps, thematic cartography, etc.
- Attributes. One of the most relevant features of GeoShow3D is its capability to manage information about elements of interest distributed within the represented territory. These attributes are displayed over the virtual territory in the form of pictograms.

- Place names (toponymy). Place names of any element appearing in the territory may be visualised. The observer may also be automatically found (automatic navigation) in a particular spot by selecting its place name on the control panel. Geographical name's labels are correctly classified according to measures, background colours, letter colour, and are subsequently placed at different visualisation levels.
- Views. Preset frames may be directly accessed and guided tours may be organised.
- Coordinates. Geographical coordinates, UTM and altitude of any element in the territory may be indicated.
- Videos and other outputs. GeoShow3D allows high quality videos (AVI format) generated from the virtual navigation over the territory using maps and images. On-screen results can be captured both into digital files and print outputs at the same screen resolution.

From now on, the ICC will incorporate this technology as an advanced visualisation system of its images and digital cartography.

"GEOSHOW ALLOWS VIRTUAL SCENARIOS TO BE INTERACTIVELY CREATED AND FLOWN OVER IN 3D"

"A FILE VISUALISER ALLOWS EITHER INTERACTIVE NAVIGATION OVER THE TERRITORY AND ACTIVATION OF MULTIMEDIA ELEMENTS ASSOCIATED TO EACH FILE"



THE GEOCAMPUS CATALUNYA CONSORTIUM COMES TRUE

The Generalitat de Catalunya (autonomous government of Catalonia) has approved the statutes of the Geocampus Catalunya consortium, an entity aimed at grouping all activities related to the geological richness of the area of Pallars Jussà and nearby areas. This aspect will be promoted from the geological research and study of soils as well as that of economic and touristic point of view.

Among other activities, this consortium will coordinate the tasks of the consortium's members, work in collaboration with

universities and private enterprises that study the area, and promote environmental knowledge and divulgation. All this will be achieved through coordination and international promotion of all activities related to the study and diffusion of the area's geological richness and diversity.

The consortium is made up of several departments of the Generalitat de Catalunya, the ICC, the Consell Comarcal del Pallars Jussà, Ajuntament de Tremp and Universitat Autònoma de Barcelona.

NOTICE BOOK OF THE DE LES COMARQUES

Notice book of the *Mapa geològic de les comarques de l'Ebre 1:100 000*

Institut Cartogràfic de Catalunya and Institut per al Desenvolupament de les Comarques de l'Ebre
1st edition: Barcelona, January 2003
Map and book: 15,02 euros (VAT included)

In January 2003 a notice book related to the *Mapa geològic de les comarques de l'Ebre 1:100 000* (1999) (geological map), published by the Institut per al Desenvolupament de les Comarques de l'Ebre and the ICC, was released.

It is an explanatory report that complements the map with texts and figures for a better understanding of the map (detailed geological cross-sections of areas of special interest, and evolution of the coastline and the plain of the Ebre's delta, among others).

The report is divided into four chapters:

- An introduction with the geographical situation of the area covered by the map.
- The geology, where material lithology, morphostructural units, stratigraphy, structure and geological history are described.
- The following chapter is a description of geological resources: hydrocarbons, mining and hydrogeology.

RESEARCH

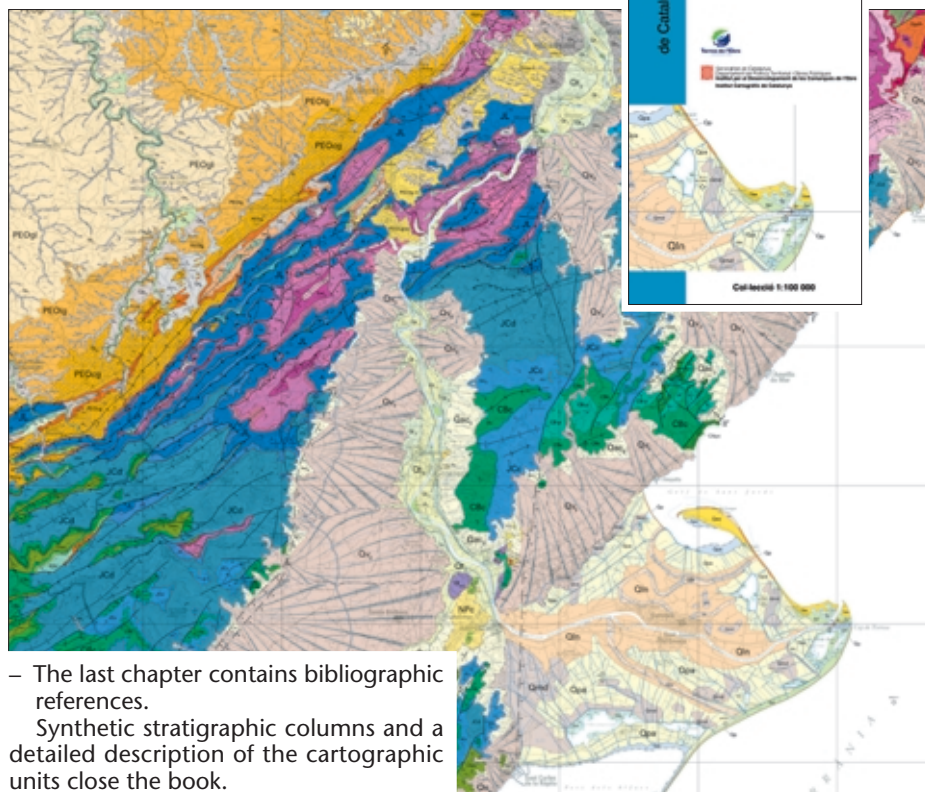
TERRESTRIAL LASER

At the end of 2002 the ICC purchased the Riegl Z-210 terrestrial laser system. This system scans the area to be measured by means of a laser that provides distance and reflectance measures of the object (images 1, 2). It also supplies information about the element's texture as it is capable of observing RGB channels (image 3).

3D models of buildings and other elements of interest may be generated by combination of several scenes (image 4). These scenes may be oriented by identifying points with known coordinates in the images. However, in order to be more productive, this new sensor is soon expected to be integrated into the GeoVan system (see ICC's Newsletter, No. 16).

This integration will enable observations of the GeoVan (GPS/IMU) orientation subsystem to be used to directly reference all points measured by the terrestrial laser system. Once the integration has been achieved, it will be possible to make measurements with the laser system kinematically (with the GeoVan in circulation). This will allow road banking to be measured and building facades to be registered.

THE MAPA GEOLÒGIC DE L'EBRE 1:100 000



– The last chapter contains bibliographic references.

Synthetic stratigraphic columns and a detailed description of the cartographic units close the book.

NEW

ATLES COMARCAL DE CATALUNYA. PLA DE L'ESTANY

**Atles comarcal de Catalunya.
Pla de l'Estany volume**

Institut Cartogràfic de Catalunya and Diputació de Girona
1st edition: Barcelona, December 2002
27,04 euros (VAT included)

In December 2002, *Atles comarcal de Catalunya*, volume of Pla de l'Estany, created by the Universitat de Girona and published by the Institut Cartogràfic de Catalunya (ICC) and the Diputació de Girona, came to light. This atlas is part of the collection *Atles comarcal de Catalunya* published by the ICC and includes all Girona's regions. Its features make it a useful reference work for scholars, the general public and school children and teachers.

The volume of Pla de l'Estany, shows the particular aspects, habits and daily life of the people of this comarca with a journey through its general, physical and human geography, history and heritage, landscape and environmental challenges. This thematically organised voyage provides a global descriptive insight into the comarca, enlivened by a vast number of images.

**“THE PLA DE L'ESTANY IS
A YOUNG REGION, THE SECOND
SMALLEST AFTER THE BARCELONÈS.
DESPITE ITS SIZE, THE GEOGRAPHICAL
HETEROGENEITY IS PATENT”**

The *Atles comarcal de Catalunya*, volumes of La Val d'Aran (1994), Baix Llobregat (1995), Baix Empordà (1998) - with which a new collaboration with the Diputació de Girona to cover all Girona's comarcas was initiated - Alt Empordà (2000) and La Garrotxa (2001) are now available. The volume of the Cerdanya will be coming out soon.



Image 1: Reflectance of object on laser pulses (intensity of returned pulse).

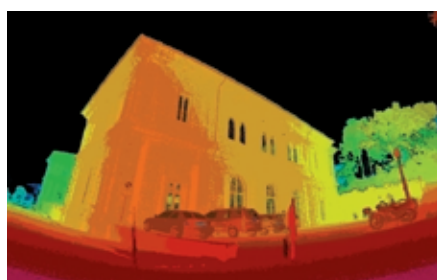


Image 2: Distance of object in colour codification (red: near, green-blue: far) combined with the intensity of returned light.



Image 3: RGB channels of object.

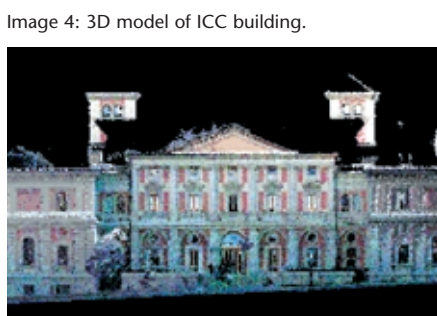


Image 4: 3D model of ICC building.



BRIEF NOTES

FREE DIFFUSION OF DIGITAL CARTOGRAPHIC BASE IN THE ICC

As we live in an information society, free dissemination of digital base information is important in any modern country. For this reason, the ICC, an organization attached to the Departament de Política Territorial i Obres Públiques (DPTOP), has promoted it. In this way, citizens may easily access to the use of technologies based on georeferenced information. Therefore, the ICC follows the same tendency of the rest of Europe. For further information and details, please refer to:

www.icc.es/cat99/catd/bases.html

Cartographic information is for free; support and data recording costs are 6 euros (VAT not included) for a CD-Rom and 12 euros (VAT not included) for a DVD.

Questions and orders should be addressed to the ICC's distribution and customer service points.

Regarding the commercial use and publication of maps based on such information, their price has been reduced by 50%, whether in symbolised bases or raster format e-mail address:

www.icc.es/cat99/catd/license/llic_us.html

With this initiative, the ICC has definitively promoted the use of digital cartography in Catalonia.

"AAPG INTERNATIONAL CONFERENCE AND EXHIBITION" GEOLOGY CONFERENCE

This conference will be held in Barcelona from 21st to 24th September 2003. It will be co-organised by the ICC, which will provide logistic support and help and arrange scientific visits where several aspects of Catalonia's geology will be revealed.

The motto of the conference is "Barcelona, meeting point of geology, energy and cultures".

Further information can be obtained from the ICC web page:

www.icc.es

PRIZE FOR THE ICC

In February 2003 the ICC was awarded the "Amigos del montañismo vasco" (Friends of Basque Mountaineering) prize by the Euskal Mendizale Federakundea for its work on avalanche forecast.

DIGSA'S SECOND THEORETIC-PRACTICAL TRAINING COURSE ON ADVANCED CARTOGRAPHIC TECHNIQUES: SPATIAL PHOTOGRAMMETRY

From 10th to 21st February 2003 DIGSA's Second Theoretic-Practical Training Course on Advanced Cartographic Techniques: Spatial Photogrammetry was held in the ICC headquarters. This course was addressed to DIGSA (directors of geographical institutes of South America, Spain and Portugal) cartographic institutions and is part of the training courses on advanced cartographic techniques (for more information about the first course see ICC's Newsletter, No. 16).

The aim of this course was to provide an insight into spatial photogrammetry from a practical and applied point of view, placing emphasis on useful concepts and algorithms for automatically solving photogrammetric problems.

"THE AIM OF THE COURSE WAS TO PROVIDE AN INSIGHT INTO SPATIAL PHOTOGRAMMETRY"

The course was directed to engineers and graduates from DIGSA cartographic institutions with knowledge of photogrammetry. Participants included researchers and professionals working on the development of spatial photogrammetry or on cartographic production, photogrammetry specialists interested in learning about the latest advances in this particular field, experts from related disciplines wishing to complement their training and experience with spatial photogrammetry, among others.

The course dealt with the fundamentals of spatial photogrammetry, namely:

- Equipment (satellites, cameras and sensors).
- Orientation processes, in particular automatic methods.
- Applications (gathering of geographical information).

The course lasted two weeks, and included the attending to the 5th Geomatics Week, consisting of technical sessions on cartography, telematics and navigation as well as specialised symposiums. The length of the course was 60 hours, divided into daily 6-hour theory-practice sessions.

The classes were conducted by ICC's professionals, photogrammetry experts with wide experience in research and development environments and production areas. The Instituto Geográfico Nacional and the Centro Geográfico del Ejército also provided assistance in developing the course.

The total number of participants was 25 technicians from 7 countries: Spain, Portugal, Colombia, Bolivia, Brazil, Venezuela and Chile.



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