BRIEF NOTES

IN MEMORY OF JUANJO MORENO

On 28 July, Juanjo Moreno Soriano, the developer of management programs at the ICC, died suddenly. He will be remembered for his friendly and cheerful nature, as well as for his enormous professionalism in the nearly twenty years of service he gave to the ICC.

TRAVELING EXHIBITION OF CARTOGRAPHY OF THE PYRENEES

This exhibition has been organized by the ICC within the framework of the Comunitat de Treball dels Pirineus (Pyrenean Work Community), since the Generalitat de Catalunya is president of the Community during the period 2003-2005.

Entitled "Historical evolution of the cartography of the Pyrenees", it shows 50 reproductions of maps of all or parts of this mountain range, covering a period from the 14th century to the present day.

The exhibition was opened at the plenary meeting of the Community held in la Seu d'Urgell on September 2004, and it will travel through the 8 regions of the Community: Andorra, Aquitaine, Aragon, Catalonia, Languedoc-Roussillon, Midi-Pyrénées, Navarre and the Basque Country (1 month per region).

Coinciding with the IV Seminar on Mountain Cartography, the exhibition will also visit the sanctuary of Núria.

4TH WORKSHOP ON MOUNTAIN CARTOGRAPHY

The Mountain Cartography Commission of the International Cartographic Association (ICA/ACI) held the 4th Workshop on Mountain Cartography in the valley of Núria from 30th September to 2nd October 2004. The workshop takes place every two years and analyzes various aspects related with mountain cartography, including avalanche and glacier cartography, relief representations, tourist maps, data capture with photogrammetry or remote perception, and multimedia geovisualization.

33 papers were presented at this latest workshop, which was attended by 42 cartographers from various countries: Austria, Bolivia, Canada, France, Germany, Poland, Rumania, Slovenia, Spain, Switzerland and U.S.A.

6TH BARCELONA GEOMATICS WEEK

On 8-11 February 2005 the 6th Geomatics Week will be held in the Congress Hall of Fira de Barcelona. This international and multidisciplinary congress on geomatic sciences is held every two years and organized by the Institut Cartogràfic de Catalunya, the Institut de Geomàtica, the Col·legi Oficial d'Enginyers Tècnics en Topografia-Catalonia division, and the Escola Politècnica Superior d'Edificació de Barcelona.

The main theme of this 6th event will be "High resolution sensors and their applications". Furthermore, as is customary, two awards will be presented: the Luis Martín Morejón award and the Jordi Viñas i Folch award for research work. For information about the requirements for participation, please consult the following web site: www.setmana-geomatica.org

To coincide with this congress, and taking place at the same venue, the II International Geotelematics Exhibition (GlobalGeo) will serve as an international meeting point for learning more about supply and demand in the geomatics and geotelematics market.

III DIGSA THEORETICAL AND PRACTICAL TRAINING COURSE ON ADVANCED CARTOGRAPHIC TECHNIQUES: Map publishing using digital techniques

On 14-21 May 2004 the "III theoretical and practical training course on advanced cartographic techniques: Publication of cartography with digital techniques" was held at the headquarters of the ICC. This was aimed at DIGSA cartographic institutions (directors of geographic institutes in South America, Spain and Portugal) and it formed part of the series of training sessions devoted to advanced cartographic techniques. (For more information about the first and second course, see ICC Newsletters Nos. 15 and 17, respectively).

The aim was to offer a broad overview of cartographic editing and publication processes from a practical and applied angle, without neglecting the theoretical concepts and principles that must be taken into account for the preparation, production and publication of cartography in a digital environment.

"THE AIM OF THE COURSE WAS TO PROVIDE A BROAD OVERVIEW OF CARTOGRAPHIC EDITING AND PUBLICATION PROCESSES"

The course was aimed at engineers and graduates from DIGSA cartographic institutions with a knowledge of cartography, be they responsible for cartographic research and development in a digital environment, technicians engaged in cartographic production and distribution, or specialists in related disciplines wishing to complement their training.

Areas dealt with included cartographic design; cartographic editing and training; infography and treatment of colour; and digital printing. The main cartographic products of the ICC were presented, as well as those of the two centres with which this series of sessions was organized: the Centro Geográfico del Ejército and the Instituto Geográfico Nacional.

The course offered a total of 30 hours, divided between theoretical and practical sessions.

The training was given by professionals at the ICC who are experts in the field of topographic databases and derived and thematic topographic cartography at both small and medium scales.

A total of 22 technicians took part, from 9 different countries: Argentina, Brazil, Colombia, Costa Rica, Ecuador, Panama, Portugal, Venezuela and Chile.

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ICC INSTITUT CARTOGRÀFIC DE CATALUNYA

NEWSLETTER INSTITUT CARTOGRÀFIC DE CATALUNYA

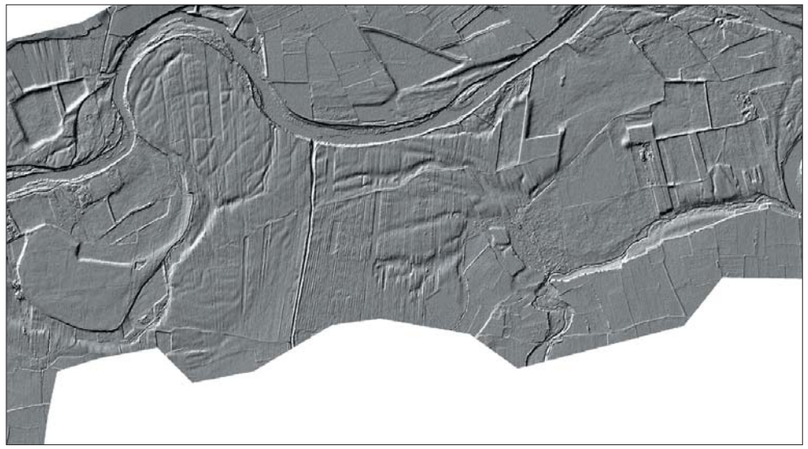
PLANNING OF RIVER AREAS OF CATALONIA (PEFCAT)

In April 2001 the ICC signed an agreement between the Departament de Medi Ambient (Environment), the Departament de Política Territorial i Obres Públiques (Regional Planning and Public Works) and the Agència Catalana de l'Aigua (Catalan Water) to carry out the topographic work involved in the Planning of river areas of Catalonia (PEFCAT) project, which consisted in performing the technical tasks to delimit the hydraulic public domain and the flood-prone areas of the main rivers of Catalonia. This project must be accomplished between years 2001-2006.

"THE PEFCAT PROJECT IS ONE OF THE SPECIAL PROJECTS UNDERTAKEN BY THE ICC"

The project includes the elaboration of digital cartography of permanent and seasonal rivers in all the basins of Catalonia. The data are captured using an airborne LIDAR system (see ICC Newsletter, No. 15), with an average density of 1 point/m^2 and an accuracy of approximately 15 cm. By the end of the project more than 1,500 million points will have been measured with LIDAR.

"BY OCTOBER 2004 A TERRAIN MODEL OF MORE THAN 100,000 HA HAS BEEN GENERATED"



Shaded relief map of Medinyà area.

SUMMARY

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Generalitat de Catalunya
Institut Cartogràfic de Catalunya

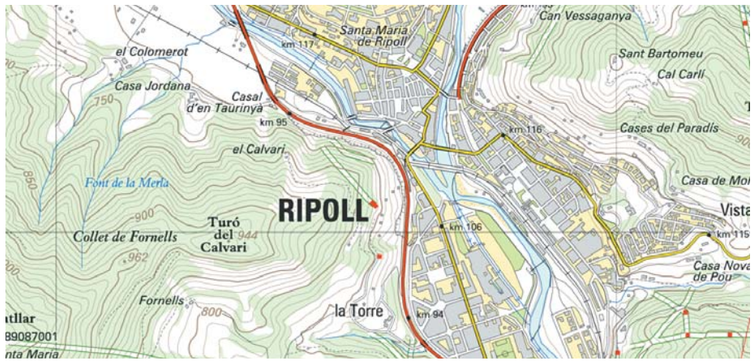
In selecting the area to be mapped, account has been taken of the appropriate coverage margins, in order to ensure correct delimitation of the hydraulic public domain and the flood-prone areas.

"THE MAPPING WIDTH OF THE COURSE OF THE RIVERS IS SPECIFIC FOR EACH SECTION AND IT IS DEFINED TOGETHER WITH THE SECTIONS MAPPED"

The tasks assigned to the ICC in this special project are:

- Obtaining a digital elevation model (including the topography and outlines of constructions): Data capture with the airborne laser altimeter, digital elevation model (DEM) with grid of 1 x 1 m^2, production of the topography or the diagram of narrow sections, bridges and barrages at all the points at which the river course may change, and conditioning the water film.
- In general, bathymetric surveys are not made because the flow of the rivers in Catalonia when the data are captured is very low and insignificant compared with the high water flow.
- Updating of the 1:5,000 colour orthophoto sheets corresponding to the areas of study: photogrammetric flight, topographic support, scanning of the negatives, aerial triangulation of the photogrammetric flights and rectification of the image.
- Integration of the delimitations into a geographic information system.

TOPOGRAPHIC DATABASE OF CATALONIA 1:25,000 (BT-25M), V.1



At the end of 2003, the ICC began the production of the Topographic Database of Catalonia 1:25,000 (BT-25M), and in May 2004 its representation at 1:20,000 scale was made available to users both on paper and in several digital formats.

The BT-25M is obtained by applying cartographic generalization processes to BT-5M (v.2) and updating the information with recent photogrammetric flights.

"THE DATA MODEL OF BT-25M IS SIMILAR TO THAT OF BT-5M"

In general, the hydrography, population and land cover structures of BT-5M are maintained, making only the changes required to adapt these to the new scale. Just like the BT-5M, it is a vectorial database 2.5D. A new feature added is a classification of the communications network based on the information provided by the Direcció General de Carreteres (Road Office).

The relief is represented by contour lines, spot heights at significant points and taluses. Contour lines show variations in altitude of 10 m, with master contour lines every 50 m. In extremely flat areas contour lines showing variations in altitude of 5 m are added.

The planimetric data include information about the hydrography, making a distinction between the linear hydrographic network and water masses, and between natural and artificial waters; communication routes; railways and cable transport; population, which includes buildings, constructions, sports fields, billboards or auxiliary urban elements; and land cover and vegetation, such as woods, rocks, wetlands, beaches, sandy areas or flood-prone watercourses, for example.

The communication network presents some differences with respect to BT-5M. Roads are collected by the centerlines and they are classified according to the Direcció General de Carreteres information. In the case of the railways, the classification on BT-50M is also added. The majority of the junctions are shown as elevated sections of public highways or pipelines, and bridges are only collected when they are constructions of an unusual shape.

Some items that in the BT-5M were represented to scale are now collected by point symbology, such as small isolated buildings or covered tanks. Others are grouped, such as groups of trees and woods.

All the polygons are flat. In the case of constructions, these are positioned at the elevation of the highest point. In the case of flat polygons, such as reservoirs or lagoons, these are positioned at a constant height.

The hardcopies or the digital versions (PDF or GEOTIFF) are produced by applying automatic symbolization processes during the digital plotting, which include the representation of some concepts with linear patterns and the incorporation of the toponymy database.

To obtain these hardcopies, users must select the area and the preferred format (paper or digital). In paper format, A1 or A2 sizes are available, with a horizontal or vertical orientation. They delivery includes a sheet indicating the acquired area, the sources of information, the date and the version of the data, the date of the flights with which the sheet has been updated and the legend.

As is now customary when the ICC produces a database, this product is distributed free of charge. The only cost is for the medium on which it is supplied and the recording of data: 6 euros + VAT for CD-ROM and 12 euros + VAT for DVD. The cost of the product in paper is 10 euros for the A2 size and 12 euros for the A1 size.

BT-25M can also be downloaded free of charge from the ICC web site in MrSID raster format. In this case, the area is that delimited by the sheet section derived from the MTN 1:50,000.

The product has been launched with coverage of the area of el Ripollès, and this will be followed by the areas of la Garrotxa and Osona.

V.3.1 FOURTH REVISION OF TOPOGRAPHIC DATABASE OF CATALONIA 1:50 000 (BT-50M) HAS ENDED

In July 2004, the 4th revision of v.3.1 of Topographic Database of Catalonia 1:50 000 (BT-50M) was completed.

The distribution area of the database coincides with the division of the *Mapa Topográfico Nacional 1:50 000*.

"CATALONIA IS COVERED BY 89 SHEETS"

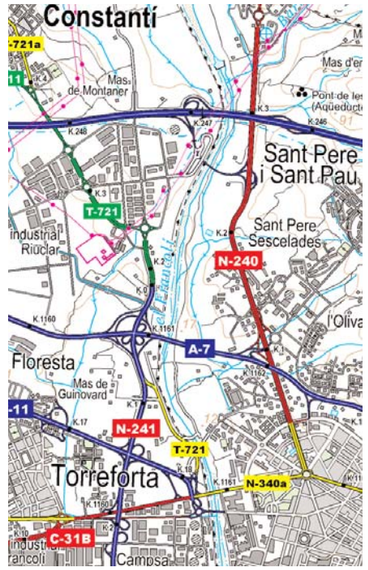
Main characteristics of BT-50M v.3.1 can be stated as follows:

- The coding is coherent with other topographic databases as result of the joint analysis of their objects.
- The number of complex objects (linear, polygonal) has been increased.
- More alphanumeric information (attributes) has been incorporated in order to make easier the territorial analysis.
- The connectivity and completeness of the hydrographic network through theoretical or schematic axes; downstream orientation of all network lines.
- The connectivity and completeness of road and rail networks; the association of supplementary information such as codes, ownership and kilometric points of roads or railway managing companies.

After the 4th revision, v.3.1 of BT-50M contains updated information at December 2003 of catalogued roads network, and the latest revision of the *Ortofotomapa de Catalunya 1:25 000* has been used to update the remaining layers. The main difference between this revision and the previous one is that the functional classification of the catalogued roads has been completed adding the proposed selection of secondary roads.

"THE UPDATING PERIOD OF BT-50M TOOK ALONG 2 YEARS. IT HAS TECHNICAL SPECIFICATIONS AND METADATA"

This product can be acquired free of charge from the ICC customer service centres in DGN, DXF or EXPORT format. Only the medium and data recording are not free.



RESEARCH AND DEVELOPMENT

SEISMIC RISK SCENARIOS IN EUROPEAN CITIES. RISK-UE PROJECT

The ICC is one of the European bodies which has taken part in the study on seismic risk scenarios in European cities (RISK-UE), led by the BRGM of France. This study has been financed by the V Framework Program of the European Union for three years (2002-2004).

"RISK-UE FOCUSES ON THE EVALUATION OF VULNERABILITY AND SEISMIC RISK AT A REGIONAL SCALE AND ITS APPLICATION TO CATALONIA"

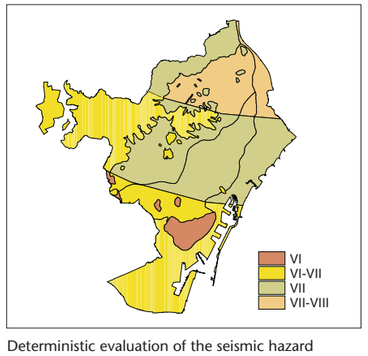
Emergency organization in the event of an earthquake in highly populated cities needs to generate risk scenarios that take account of the particular characteristics of these cities. In this project an attempt has been made to define earthquake scenarios based on the evaluation of hazard, the vulnerability of the urban fabric and the possible consequences of earthquakes.

The main aim of the project is to develop a general and modular methodology for generating risk scenarios that take account of the special characteristics of cities within Europe, making a particular evaluation of the risk to cultural heritage and the economic impact.

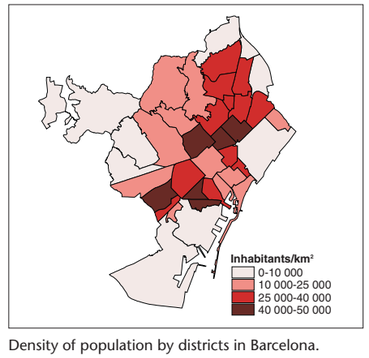
"THE METHODOLOGY IS APPLIED TO SEVEN EUROPEAN CITIES"

The European cities where this methodology is being applied are: Barcelona, Bitola, Bucharest, Catania, Nice, Sofia and Thessaloniki.

As a result of this project, a common European methodology has been established for the analysis of vulnerability both in buildings and in the urban system. This will lead to improved planning and management of rescue teams in the event that a earthquake occurs.



Deterministic evaluation of the seismic hazard in Barcelona.



Density of population by districts in Barcelona.

NEW

SUBMARINE RELIEF MAP OF CATALONIA 1:250,000

Mapa del relleu submarí de Catalunya 1:250 000
Institut Cartogràfic de Catalunya, Grup de Recerca Consolidat en Geociències Marines of the Universitat de Barcelona and European Union
1st edition: Barcelona, July 2004

In July 2004 the ICC, the Marine Geosciences Research Group of the Universitat de Barcelona and the European Union published the *Mapa del relleu submarí de Catalunya 1:250 000*.

This submarine relief map has been produced using multibeam bathymetric data acquired by the Marine Geosciences Research Group, and complemented with multibeam data and probe reports from the Institut Français de Recherche pour l'Explotation de la Mer, isobaths from the Direcció General de Pesca (Fishing Office) of the Generalitat de Catalunya, and the article by Canals, et al. "Toponímia de la Mar Catalano-Balear", published in the *Boll. Soc. Hist. Nat. Balears*, no. 26.

The data has been acquired using an 81 beam probe carrying out successive overlapping parallel runs providing a scanning width on the sea-bed up to 3.5 times the depth of the water.

"THE MAP SHOWS THE SEGMENTATION OF THE CONTINENTAL MARGIN OF CATALONIA IN A SERIES OF UNITS WITH DISTINCTIVE CHARACTERISTICS FOLLOWING THE COASTLINE"

The submarine toponymy is derived from the information provided by the associations of fishermen of l'Ampolla, Blanes, Llançà and Vilanova i la Geltrú, as well as scientific publications. The map only includes part of the submarine toponymy commonly used by fishermen adapted to the scale.