NEWSLETTER

INSTITUT CARTOGRÀFIC DE CATALUNYA

YEAR 6 ■ JUNE 2001 ■ NUMBER 13

COMPLETION OF THE SECOND ORTHOPHOTOGRAPHIC COVERAGE OF CATALONIA AT 1:5 000 AND 1:25 000 SCALES

The base of orthophotographic cartography is a vertical aerial photograph, and therefore the elements of the land surface are visible on an orthophotomap. The original photographs are geometrically corrected and converted into orthophoto products, making intensive use of image mosaic processes and radiometric compensation between photographs.

"ORTHOPHOTOGRAPHIC CARTOGRAPHY MAKES IT POSSIBLE TO OBTAIN QUICK TERRITORIAL COVERAGE AND TO COMPLETE 2-D CARTOGRAPHY BY MEANS OF INTERPRETATION AND DIGITALIZATION"

Radiometric improvement and monitoring of territorial changes

Within this production line, the ICC has completed the second orthophotographic coverage of Catalonia at 1:5 000 scale (in black and white) and at 1:25 000 scale (in color); this coverage has been reinforced by improved control of the metric camera orientation systems and by refinement of the radiometric processing of the digital images. These procedures that improve the quality of the images make it considerably easier to interpret the orthophotomaps.

"TO ENSURE THAT THE SERIES ARE UPDATED, THE THIRD COVERAGE HAS BEEN COMMENCED"

The photographs are digitalized directly from the negative, dispensing the process of creating transparencies. This saves processing time and improves the quality of the resultant image.

One feature to be highlighted with respect to the flight used for the *Ortofotomapa de Catalunya 1:25 000* in color is that it was made with a double camera, and so photographs were obtained simultaneously in both color and infrared color, which are very useful for the vegetation interpretation.

All the sheets in both series are distributed by electronic printing using the plotters at the ICC distribution and sales centers, which significantly reduces the stock.

ORTOFOTOMAPA DE CATALUNYA 1:5 000

	1st edition	*2nd edition*	*3rd edition*
Project years	1986-1992	1994-2000	2001-2005
Number of sheets	6 331 in b/w	4 274 in b/w	4 274 in color
MTN-50M sheet section	12 x 8	8 x 8	8 x 8
Flight date	1983-1992	1994-1998	2000-2004
Flight scale	1:22 000 in b/w	1:32 000 in b/w	1:22 000 in color

ORTOFOTOMAPA DE CATALUNYA 1:25 000

	In b/w	*In color*		
	1st edition	*1st edition*	*2nd edition*	*3rd edition*
Project years	1992	1994-1995	1998-2000	2001-2002
Number of sheets	304	304	304 in color 304 in IR	304 in color 304 in IR
MTN-50M sheet section	2 x 2	2 x 2	2 x 2	2 x 2
Flight date	1990-1991	1993	1996-1997	2000-2001
Flight scale	1:70 000	1:60 000	1:60 000	1:60 000

SUMMARY

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Generalitat de Catalunya
Institut Cartogràfic de Catalunya

PITSA PROJECT CLOSING CEREMONY

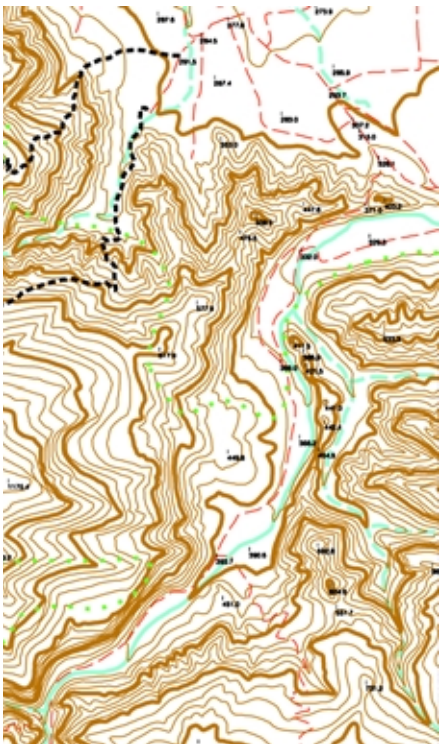
The ICC has completed the project to produce orthophographic and topographic cartography at 1:25 000 scale of the Republic of Venezuela, to be specific, of the north of the River Orinoco (1998-2000). In total 212 000 km² have been covered and 1 673 orthophotomaps and 1 779 line maps have been generated (see ICC Newsletter No. 4 and 7).

The event to mark the completion of the project was organized by the ICC and the Dirección General de Desarrollo Rural (Rural Development Office) of the Ministerio de la Producción y el Comercio (Ministry of Production and Commerce, MPC), and it was held in March 2001 in Caracas. Approximately 150 people attended this event, including representatives of the Spain Embassy in Venezuela, government institutions, universities and businesses in the sector.

The speakers provided details of the stages in which the PITSA project was carried out, the computer equipment used (hardware, software...), the products presented to the MPC and the potential uses of this digital cartography, which is highly suitable for producing a high-quality land registry.

"THE TERRA PROJECT AIMS TO ACTIVATE THE LAND REGISTRY OF THE REPUBLIC OF VENEZUELA USING THE CARTOGRAPHY PRODUCED BY THE ICC"

The cartography produced will serve as the base of the TERRA project of the Republic of Venezuela, which consists in drawing up a rural land registry on the basis of a physical, legal and economic perspective.



PRESENTATION OF ZONING PROJECT I

Following the completion of the agro-ecological zoning project in Namibia (1998-2000), an informative presentation was held in April 2001 at the headquarters of the ICC, aimed at professionals and researchers in Catalonia who are specialists in edaphology and agriculture. The official presentation was made in Namibia in May, and it was attended by the most senior representatives of the institutions that took part in the project.

Sponsored by the Agencia Española de Cooperación Internacional (Spanish International Cooperation Agency, AECI), this has been a cooperative project between the Ministry of Agriculture, Water and Rural

RESEARCH AND

GEODETIC SERVICES

The Catalan Integrated Geodetic Positioning System (SPGIC) is a positioning service available to the public which provides georeferencing in the Catalonian territory.

"THE SPGIC INCLUDES: CLASSIC GEODETIC NETWORKS, ACTIVE POSITIONING SYSTEMS AND GEODETIC SUPPORT ELEMENTS"

With reference to the classic geodetic networks, the ICC has reobserved the low-order network of the IGN and it is developing the utilitarian network and the leveling network. The aim is to gain easy access to known coordinate points and to obtain the centimetric accuracy necessary for cartographic projects.

The active positioning systems are based on the CatNet network of GPS permanent

stations. As at June 2001 the ICC has 8 stations in operation of the 13 planned.

Via the Internet, the Institute offers the geodetic support elements: the geoid UB91, the datum transformation parameters, the geodetic calculators and the records of the geodetic marks.

SPECIFICATIONS OF THE CATNET PUBLIC SERVICES

	Observable	*Time*	*Transmission*	*Solution*	*Accuracy*
GEOFONS*	code and phase	postprocess	Internet	single station	<0.1 m
RTK**	code and phase	real time	DAB/GSM	multistation	<0.15 m
CATPOS**	code and phase	real time	Internet	multistation	<0.15 m
RASNET**	code	real time	GSM	multistation	0.2-0.8 m
RASANT*	code	real time	FM/RDS	single station	0.8-3 m

* In operation since 1995. ** Under development.

THE AGRO-ECOLOGICAL
N NAMIBIA

Development and the National Planning Commission of Namibia, and the Institut Cartogràfic de Catalunya. The aim of which was to define the rural areas with similar agricultural potentialities and limitations, and in this way provide the most effective support for the development of each zone (see ICC Newsletter, No. 9).

"To mark the completion of the project, the ICC has produced a satellite image poster of Namibia at 1:2 000 000 scale"

The ICC participation has consisted in producing soil cartography of Namibia at 1:1 000 000 scale, of the NE region of the country at 1:250 000 scale, and two areas of special interest at 1:100 000 scale, and in introducing the data obtained into a GIS.

"ICC specialized personnel will provide training in GIS technologies orientated towards census data"

This initial project has led to another project, also sponsored by the AECI, to offer the National Planning Commission support in the field of GIS in updating the population and housing censuses. This training is to be given in three stages in 2001.

DEVELOPMENT

CATALONIA ONLINE

The ICC has developed the image server *Catalonia sheet by sheet*, which is accessible via the Internet. This server enables the cartographic series produced by the Institute to be viewed by means of a toponymic search.

"Catalonia sheet by sheet is an interactive virtual catalogue"

At present, the toponymic database on which the search is made is the 1:250 000, and the cartographic series that are viewed are the topographic series at 1:5 000, 1:10 000 and 1:50 000, the orthophotographic series at 1:5 000 and 1:25 000, and the geological series at 1:25 000. This volume of information will gradually be increased.

In order to develop the application, the original TIFF of the image is scanned and converted into compressed LizardTech MrSID format to reduce the size of the file and to decrease the waiting time prior to display, while the visual quality of the map is maintained.

To view a toponym on a specific sheet, the user must enter the (full or partial) name of the toponym. The result of the search offers a list of the cartographic series in which this toponym appears, and then the user may select the series of interest. Finally, the sheet on which the toponym appears is displayed, and the user can also move around the remaining sheets that cover the territory.

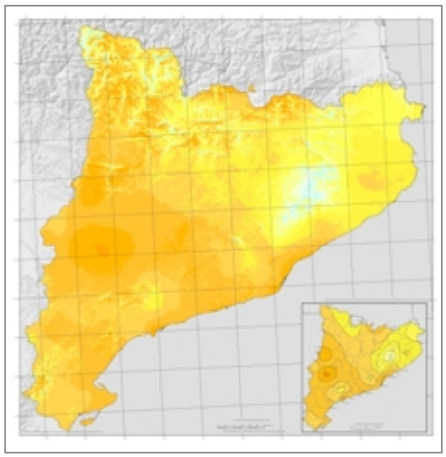
"Online inquiry provides information about the availability of the sheets, the area covered and the date of production"

Therefore, by means of online inquiry with a very quick response time, users may view each of the 10 000 maps that the ICC has placed on the Internet prior to purchasing them.

NEW

CLIMATIC ATLAS OF CATALONIA

Atles climàtic de Catalunya. Radiació solar
Institut Cartogràfic de Catalunya and Departament de Medi Ambient
1st edicion: Barcelona, March 2001
50 x 45 cm. 21 pages. 7 000 PTA incl. IVA (42.07 euros)



The *Atles climàtic de Catalunya* has been jointly produced by the Institut Cartogràfic de Catalunya and the Departament de Medi Ambient (Department of Environment). It consist of three parts: thermopluviometry (published in 1997), solar radiation (2001) and wind.

The solar radiation atlas, which appeared in March 2001, has been produced by the Universitat Politècnica de Catalunya and the Institut Català d'Energia (Catalan Institute of Energy).

"The solar radiation atlas maps the most important characteristics of the behavior of global solar radiation in Catalonia"

The atlas contains 14 maps, each accompanied by a brief explanation of what is shown: a map of the location of the solar radiation stations, a map of the annual average daily global irradiation and 12 maps showing monthly average.

In order to publish this atlas, it has been necessary to coordinate the actions of specialists of recognized prestige in this field and to plan the installation of global solar radiation sensors in Catalonia.

Although the task of completing the *Atles climàtic de Catalunya* is yet to be concluded, this part may be of considerable assistance to the development of appropriate territorial planning, to the optimum use of natural resources and renewable energies, and to architecture and engineering that employ environmental criteria.

It is essential to gain knowledge of how the different meteorological variables behave in space and time, in order to map the climate of Catalonia. Therefore, the application of the concept of sustainable development based on the practice of various disciplines makes it necessary to compile a series of information about the environment, and climatological information is of considerable importance in this respect.

BRIEF NOTES

VISIT OF THE DELEGATION FROM KUMMING (YUNNAN, CHINA)

On 11-18 March 2001 the ICC received the visit of eight delegates from the city of Kumming (province of Yunnan), thereby establishing the first contacts with respect to the generation of high-precision cartographic information within the context of municipal, provincial and service company management in the province of Yunnan.

MEETING OF THE MAGIC EUROPEAN PROJECT

On 15 March 2001 the meeting to monitor the MAGIC European Commission project was held at the headquarters of the ICC. This project seeks to determine the water vapor content in the atmosphere in the western Mediterranean by modeling the delay of the observations of the GPS permanent stations.

Twelve representatives of the eight organizations in Spain, France, Italy and Denmark that are participating in the project attended this meeting.

The following day, an open-doors workshop was held relating to the project, attended by thirty people with an interest in this subject.

VISIT OF THE MEXICAN DELEGATION (MICHOACÁN)

On 16-22 March 2001 the ICC received the visit of three delegates from the province of Michoacán. The principal interest of the delegation was to learn of the activities that the ICC is undertaking in the field of land registry. To be specific, the focus of the visit was on rural land registry, expertise and trends, and on the most suitable type of cartography for application to a land registry.

EXHIBITION "MAPS OF THE TERRITORY OF CATALONIA DURING A PERIOD OF TWO HUNDRED YEARS, 1600-1800"

On 16-22 September 2001 an exhibition will be held about Catalonian maps published between the years 1600 and 1800. This exhibition is included among the events of the XXII Congress of the Association Internationale de Bibliophilie, with the collaboration of the Associació de Bibliòfils de Barcelona and the Biblioteca de Catalunya (Catalonia Library).

A total of 64 maps of Catalonia will be exhibited, of which 25% are drawn from the cartographic resources of the Cartoteca de Catalunya (Catalonia Map Library), and a catalogue containing background information and observations about the maps exhibited will be published.

We look forward to seeing you there!

RECORDS OF THE GEODETIC MARKS OF CATALONIA ON THE INTERNET

The availability of a modern utilitarian geodetic network of Catalonia, three-dimensional and in which the horizontal components are not separated from the vertical component, leads to an increase in the geometric quality of any type of project that is undertaken relating to Catalonia and a reduction in the referencing costs.

"THE AVAILABILITY OF A UTILITARIAN GEODETIC NETWORK OF CATALONIA IS ESSENTIAL IN ORDER TO PRODUCE HIGH-PRECISION CARTOGRAPHY"

The geodetic networks are formed by a series of points in the territory, known as geodetic points, whose location have been measured with high-precision. These points are materialized on the terrain by geodetic marks.

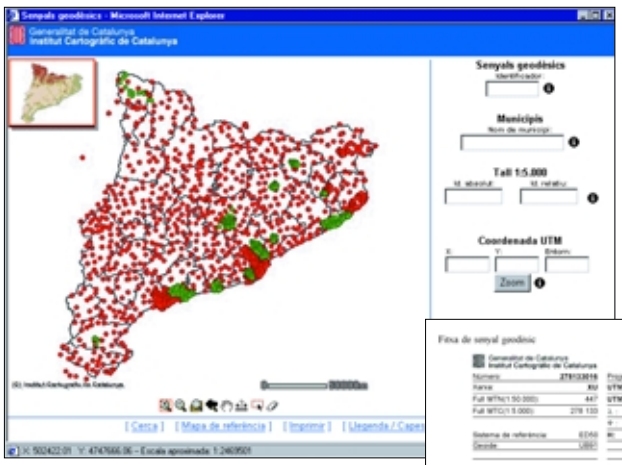
The distribution of points across the territory is adapted to the needs of the users and to conditioning factors of the terrain and the technology, with respect to the implantation and the observation of the network, and also to its subsequent use.

In order to present the description, the location, the coordinates and other information related with the geodetic marks, a record is generated for each mark.

"SINCE APRIL 2001 THE RECORDS OF THE GEODETIC MARKS OF CATALONIA HAVE BEEN AVAILABLE FOR LOOK UP ON THE INTERNET"

There are currently 513 brief descriptions entered in the database that can be consulted on the Internet. It is planned that all the records of the utilitarian network will be available on the Internet by the end of 2001.

www.icc.es/ressenyes



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