ICC
Institut Cartogràfic
de Catalunya

Generalitat
de Catalunya

Newsletter 39

The Catalan government approves the Cartographic Plan of Catalonia

The Catalan government approved the Cartographic Plan of Catalonia through Decree 62/2010, of May 18 (published in the DOGC on May 21, 2010). The Plan will constitute the Catalan Government's basic geoinformation planning tool.

The Plan outlines the objectives and coordination of cartographic activities, as well as the establishment and continuous improvement of Catalonia's geographic information infrastructure.

The Plan identifies the entire range of geographic information that the Autonomous Catalan Government and local administrations produce and use, and determines its structure, quality, availability, interoperability, updating and conditions of access.

THE CARTOGRAPHIC PLAN OF CATALONIA IS BRINGING CATALAN GEOINFORMATION IN LINE WITH THE INSPIRE EUROPEAN DIRECTIVE

The Cartographic Plan of Catalonia contains the general terms for programming, financing and carrying out coordinated activities, and the geographic information catalogue.

The document guarantees minimum levels of quality, updating and availability of cartographic activity and related geographic information that administrations are responsible for. Furthermore, the Plan covers the analysis of official geoinformation, characteristics of organization and the uses of Catalonia's geographic information infrastructure.

The Plan also features steps for the development and promotion of public and private cartographic services and research, and the list of local bodies and other organizations that carry out activities in the field of cartography and the geographic information of Catalonia.

The Cartographic Plan of Catalonia will remain in force indefinitely, although it is scheduled to be reviewed every eight years. The Cartographic Coordination Commission of Catalonia may update the studies and data annually, depending on the needs for information. ■

The complete version of the Decree is available at:
http://www.cccartografica.cat/Home-CCCC/CCCC/Documentacio

GIS4EU project ends

In Europe, spatial information is marked by the lack of harmonization among geoinformation of different geographic scales, fragmented datasets and sources, the lack of continuity on certain areas and duplication of information.

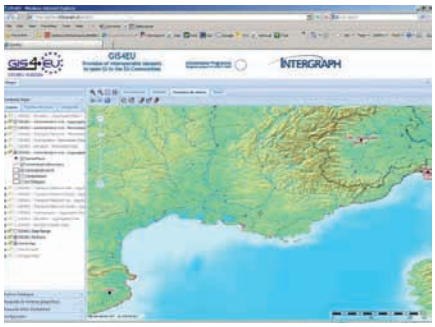
From November 2007 to July 2010, when it concluded, the ICC took part in the GIS4EU Project (provision of interoperable datasets to open GI to EU communities; see ICC Newsletter, no. 37).

The project aimed to model and test an infrastructure through which spatial information could be more accessible, practical and useable for all users, providing consistent and aggregate reference data, on the INSPIRE themes of administrative units, hydrography, transportation networks and elevation as test cases.

The GIS4EU consortium is made up of 25 European partners (researchers, data providers, technology companies and users). With each partner's particular experience, knowledge exchange and interdisciplinary work, the most complex technical aspects of the INSPIRE Directive's operational implementation were dealt with.

GIS4EU was a first step in tackling the difficult integration of datasets of diverse origin at the European level.

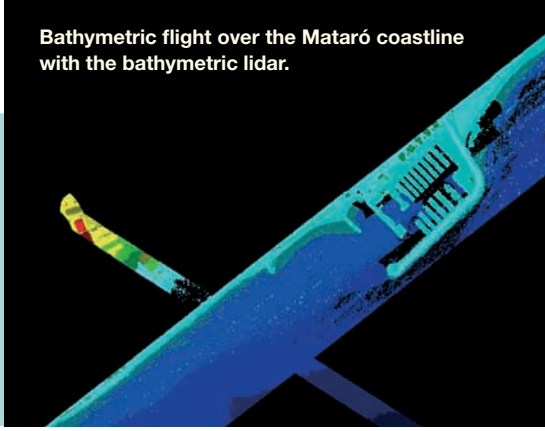
Through use of INSPIRE models and according to the requirements of the INSPIRE Directive (2007/2/EC), the GIS4EU has developed a common data model to enable access to consistent and homogeneous reference data provided by cartographic authorities of different countries and levels (national, regional and local).



The final results show a series of real cases and contribute operational and practical instructions to ensure that matters of accessibility and interoperability among different scales, borders and languages are correctly addressed.

This project will bring about knowledge and experience for implementation of the INSPIRE Directive. ■

Technological research and innovation projects, Program Contract 2006-2009



Bathymetric flight over the Mataró coastline with the bathymetric lidar.

The ICC conducts research to develop, disseminate and implement new technologies, create new products and innovative services, and acquire the knowledge necessary to be a reference centre in Catalonia.

The lines of research and development defined in the 2006-2009 Program Contract (PC) covered geodesy, sensors, digital image processing, remote sensing, cartographic production and on-line information dissemination (Geoservices).

The Institute's key achievements over the past four years have been:

- Implementation of geodetic positioning services based on virtual networks.
- In-depth study of digital photogrammetric cameras.
- Consolidation of radar techniques for the study of land movements.
- The combination of hyperspectral optical data with laser altimetry data for thematic applications.
- Geographic information standardization activities.

It is also worth nothing that in 2009, the Catalan Earth Observation Program Support Centre began its own research projects, and that the History of Cartography Study Group, in which the ICC plays an active role, has been recognized as a Consolidated Research Group of the Autonomous Government of Catalonia.

3D virtual model of Vilafranca del Penedès.

The main landmarks that the Institute has reached during the 2006-2009 PC are as follows:

GEODESY

Most relevant accomplishments

- Development of the GPS virtual stations service.
- Expansion of the GeoTeX system to adjust large-size networks.
- Version 2 of the SISA system for determination of CASI sensor orientations.
- Completion of the phase 1 of the airborne gravimetry project (GAST) and development of phase 2.

Transfer to production

- New versions of the GeoTeX software.
- Version 2 of the SISA orientation system (operational).
- GPS virtual station service for the SPGIC user community.

SENSORS

Most relevant accomplishments

- Accurate characterization of the geometry of digital photogrammetric cameras.
- Organization of the Banyoles radiometric test.
- Development of geometric models of satellite sensors.
- Calibration procedures for the ALS50-II laser altimeter.
- Geometric model of the TASI hyperspectral thermal sensor.

Transfer to production

- Production with ALS50-II laser altimeter begun.
- Integration of digital photogrammetric camera calibration methods into the aerial triangulation software.
- Integration of satellite-borne sensor models in software produced by the ICC.

DIGITAL IMAGE PROCESSING

Most relevant accomplishments

- Algorithms radiometric image normalization and global radiometric adjustment.
- Compensation of the effects of the atmosphere on images.
- New mosaic generation algorithms.
- Improvements in aerial triangulation procedures design new flows based on automatic point correlation.

Transfer to production

- Automatic generation of true orthophotos for large-scale projects.
- Overall radiometric adjustment and reflection processing tools.
- Software to compensate the effects of the atmosphere (operational).
- Increased reliability and robustness of automatic orientation phase processes.

REMOTE SENSING

Most relevant accomplishments

- Development of tools to improve subsidence detection.
- Algorithms for non-topographic applications of the laser altimeter.
- Classification techniques combining laser and optical data.
- Development of methodologies to detect territorial changes.
- Evaluation of cartographic potential of the TerraSAR-X images.

Demonstration projects

- Laser applications for forestry.
- Combination of laser altimeter data, and multispectral and hyperspectral images.

Transfer to production

- Annual map of subsidences in Catalonia with radar differential interferometry.
- Map of territorial changes generation from satellite images.

CARTOGRAPHIC PRODUCTION

Most relevant accomplishments

- Participation in the EuroSDR project for automatic generalization and development of new tools.
- Development of data model 2.2 for 1:1 000 cartography.
- Participation in the development of INSPIRE directives.
- Cooperative topographic cartography maintenance project with the Barcelona City Council and Port of Barcelona.

Demonstration projects

- "GIS4EU" INSPIRE Project for standardization of topographic databases.
- Adaptation of 1:1 000 (v2.2) urban cartography data to create a 3D virtual model of the town of Vilafranca del Penedès.

Transfer to production

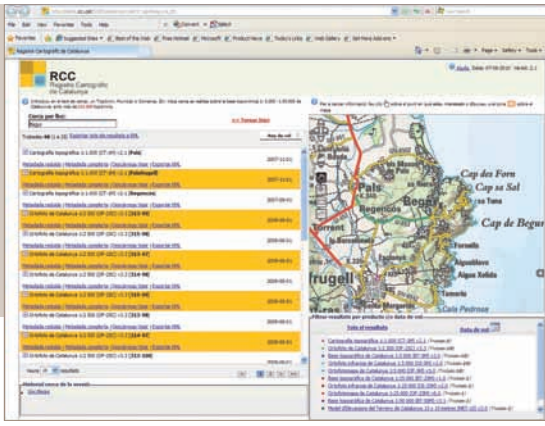
- Automation of 1:10 000 and 1:25 000 cartography production using generalization tools for planimetry and altimetry.

GEOSERVICES

Demonstration project

- AWARE European project to create a portal and set of geographic webservices to facilitate access to predictions on the volume of available water in basins based on the amount of snow. ■

The Cartographic Registry of Catalonia has registered the municipal cartography of nearly 600 urban areas



The Cartographic Registry of Catalonia (RCC) is a registry for the officialization of the cartographic products developed by public administrations. It is the basic organization of cartographic and geographic information related of the Catalan Autonomous Government and Catalonia's local entities.

The ICC is responsible for the management and administration of the RCC, under the senior management of the DPTOP, which must, through the Secretariat with competencies in territorial planning, hand down the rules and instructions necessary for its optimum performance.

The Registry's duties are the following:

- Coordination with competent bodies for the application of Law 16/2005.
- Registration of rulings granting and removing officiality.
- Enable public access to the information that the Registry contains, in the terms set out in the legislation in force.
- Provide competent bodies with the assistance necessary to carry out the duties that they are assigned as concerns the Registry.
- Issue of certificates on the information contained in the Registry.
- Custody and conservation of the documentation presented, and that is used as support for the entries made.
- Statement of general information used to carry out research and studies relative to cartography and geography.
- Promotion of communication with other cartographic registries, especially those working under the competent state bodies.

THE CARTOGRAPHY CONTAINED IN THE RCC IS CATALONIA'S OFFICIAL CARTOGRAPHY

In order for the cartography made by administrations or other public and private bodies of Catalonia to be considered official in this territory, it must meet the following requisites:

- It must have been made in accordance with the rules and standards established by the Cartographic Coordination Commission of Catalonia (C4), and incorporate the metadata approved by this body. The conditions for usage of the cartography must also be clearly indicated.
- It must have been registered in the RCC, and if appropriate, the Central Cartography Registry.
- It must be kept sufficiently updated and available for potential users, in accordance with the rules and minimum standards of quality set by the C4, in accordance with the terms of the Cartographic Plan of Catalonia.

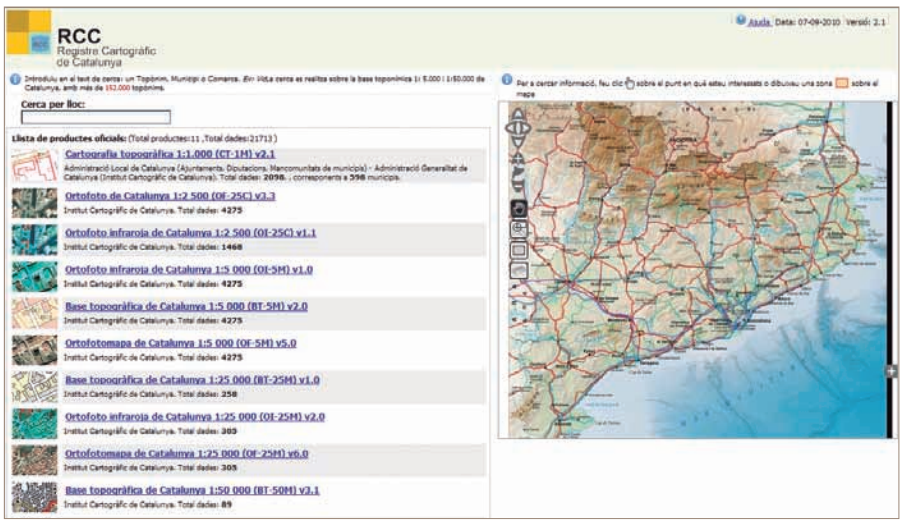
The registered official cartography and official geographic information are of mandatory use by all Catalan administrations for the development of new cartography. If there is no official cartography registered in the RCC, the official cartography as per state legislation will be used. Unofficial cartography may only be used when no official cartography exists.

The natural and corporate persons, administrations and other interested bodies must send a written application to the RCC to enter the Registry.

The information contained in the Registry may be accessed by the departments of the Autonomous Government of Catalonia, local governments and other interested administrations, as well as the natural and corporate persons who request access in the terms stipulated in Article 37 of Law 30/1992, of November 26th, on the Law for Public Administrations Juridical Regime and Common Administrative Procedure. Access to the Registry, which is free of charge, can be made via written application or directly, through telematic means, as determined by the C4.

For more information:
http://www.rcc.cat/web/rcccontent/ca/index.html

With regard to the municipal cartography of Catalonia registered in the RCC, as of June 30, 2010, 598 urban areas (443 from the Directorate General of Urban Planning, 67 from the Tarragona Provincial Government, 56 from the Lleida Provincial Government and 32 from the Commonwealth of Municipalities of the Metropolitan Area of Barcelona) were registered. ■



Images: View of the official cartography of:
↑ Begur
↓ Catalonia

Brief note

2nd HISTORY OF CARTOGRAPHY SEMINAR

The 2nd History of Cartography Seminar will be held on October 20th and 21st at the ICC headquarters. This seminar will focus on cartography and surveying in Catalonia and the Balearic Islands in the 19th and 20th centuries.

Five years ago, the 1st History of Cartography Seminar on land registry cartography in Spain, was held at the ICC. That meeting helped make known the state of the art in research on land registry cartography, and also in the exchange of viewpoints among researchers from diverse universities and fields of specialization. Over the past five years, this discipline has seen significant progress.

The Cartographic History Study Group, recently acknowledged by the Autonomous Government of Catalonia, has helped strengthen the research and study work on this type of maps. Computer applications have also improved and grown in popularity in such a way that geographic information systems have become a tool for recovery and reinforcement of all the ancient cartographic material which, until recently, was lying dormant in dispersed archives and offices.

Once again, the ICC seeks to support all of these initiatives, which must make it possible to delve further not just in the technical knowledge of cartography from the 18th to the 20th centuries, but also study the transformations in the territory, for which these land registry maps, are a prime source of information.

The papers presented at the 1st Seminar, held October 20th and 21st, 2005, can be downloaded from:

http://biblioteca.icc.cat/pdfctc/carto_cadastre_sp.pdf

This newsletter is a free publication available in Catalan, Spanish and English.

Year 15 / October 2010 / Number 39
ISSN: 1137-2370 / DL: B-40970-1996

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http://www.icc.cat

New version of IDEC geoportal

The new geoportal, as the point of entry to the IDEC and its services, and in their capacity as the initial and most basic tools to know and use the Infrastructure, now has an improved structure that makes it more user-friendly and easier to understand.

The new version, v3, reflects a new focus on the direction in which the IDEC Support Centre's (CS IDEC) objectives are aimed: putting more emphasis on the end users and their needs.

V3 OF THE CS IDEC GEOPORTAL CHANGES ITS FOCUS FROM SUPPLIERS TO THE USERS OF ITS RESOURCES

Every effort has been made to ensure that the catalogue, the basic IDEC tool, is an easy, intuitive, fast-responding and reliably-performing tool. The intention is for the metadata search to be a simple operation, with predefined filters, linked to the display of the data described in the metadata, contributing information not only on the services available through service metadata but also on their availability and response time.

The display has been conceived and designed not only as a tool to view the data described in the metadata, or as a complement to the catalogue. Rather, it has become an autonomous tool that is easy and intuitive to use.

New geoportal
www.geoportal-idec.cat/geoportal/eng

Metadata catalogue
http://delta.icc.cat/SDIExplorer/cercaCataleg.jsp?lang=en_UK

WMS service display
http://delta.icc.cat/idecwebservices/mapawms/index.jsp?lang=en

Thematic geoportals
http://www.geoportal-idec.cat/geoportal/eng/mapes-tematics

Geoinformation resource platform
http://www.geoportal-idec.cat/geoportal/eng/prg

In order to facilitate knowledge of the vast geoinformation resources (layers) available in the IDEC network, various thematic geoportals have been deployed, each of them with a specific number of preselected layers, and linked to a specific theme.

Last, mention must be made of a new component in IDEC's arsenal of resources: the geoinformation resource platform. This is a tool to share resources, allowing users to create more intelligent geowebs. ■