ICC
Institut Cartogràfic de Catalunya

Generalitat de Catalunya

Newsletter 41

Cartography terminological dictionary

Given the rapid evolution of technical terminology in the geosciences, the ICC has begun an effort to standardize the terms from the disciplines inherent to its activity.

The project is to produce a collection of four terminological dictionaries (cartography, photogrammetry, geographic information systems and remote sensing) which will be published in the 2011-2013 period.

THE FOUR TERMINOLOGICAL DICTIONARIES WILL BE PUBLISHED FROM 2011 TO 2013

The four dictionaries aim to collect the specific technical terms used in each discipline, translate them into the most common modern languages, provide a brief but accurate definition, and wherever necessary, include notes for greater elaboration.

To carry out this terminological standardization project, the Institute has worked with renowned specialists from each discipline, and has benefited from the valuable participation of the TERMCAT terminology centre, as well as the distinguished publisher Enciclopèdia Catalana, with its longstanding experience in the publication of dictionaries.

The cartography dictionary is the first one of the collection to be published, which has a predecessor in the cartography dictionary published in 1994 (Ministry of Culture / Curial; Authors: Panareda, Busqué, Rabella, 1994).

A final selection has been made from the initial entries chosen by authors Josep M. Rabella, Josep M. Panareda and Graziana Ramazzini, consisting of 2,023 terms, and featuring each of their technical translations into Spanish, French, Italian, English and German.

The entries include descriptions of the term, and feature illustrations whenever graphic clarification has been deemed necessary. There are a total of 159 illustrated terms.

The collection has been conceived as an effective tool for professionals, educators and students from all of these fields, making a vital contribution to the knowledge of these disciplines.

Two new products with ORTHO-1M

Two new orthophoto 10 cm projects were begun in 2010: the covers of areas with the most significant changes in Catalonia and the urban orthophotomap of Catalonia.

The mapsheets for the areas with the most territorial changes are based on a 9 cm resolution flight from 2010. The rectification uses the terrain elevation model (featuring infrastructures) originating from the BT-5M, with the stereoscopic edition of certain elements to reduce uncertainty as to the position of the objects displayed. This project encompasses the generation of 329 801.7 ha. As of May 2011, 27% of the project had been generated.

The 1:1 000 urban orthophotomap of Catalonia is being developed with a 7.5 cm resolution flight. The methodological approach is based on the generation of true orthophotos (True Ortho). In other words, the image rectification process uses a digital surface model with buildings derived from the 1:1 000 Urban map of Catalonia. This makes a completely azimuthal view possible, as the occultations resulting from rectifying an image are filled in with rectified parts from other images. A total of 3 463 ha had been covered by May 2011.

Geo-works

http://www.igc.cat/web/en/index.php

The development of the geological map of Catalonia is one of the duties defined by Law 19/2005, regarding the Geological Institute of Catalonia (IGC).

To fulfil this duty, the IGC produces the Geo-works, a set of six multi-annual programs designed to generate geological, edaphological and basic geothematic information, and thereby develop the reference geological cartography.

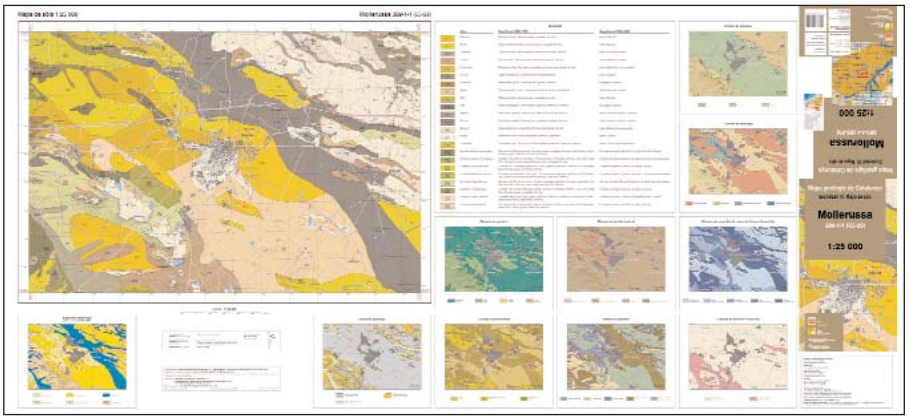
This information is collected and developed by the IGC, with the collaboration of other entities of the autonomous Catalan government.

Each of the Geo-works generates a cartographic series, a continuous database of the entire territory and a GIS.

THE ICC PROVIDES THE ALTIMETRIC AND PLANIMETRIC DATABASE, WHILE ALSO PERFORMING EDITING AND PUBLICATION TASKS

Geo-works cartographic series

Geo-work I:	1:25 000 geological map
Geo-work II:	1:25 000 geoanthropic map
Geo-work III:	1:5 000 geological map of urban areas
Geo-work IV:	1:25 000 soil map
Geo-work V:	1:25 000 hydrogeological map
Geo-work VI:	1:25 000 geological hazard prevention map



Each of these cartographic series represents a part of this "multilayered information", and the six layers of information taken together make up the geological map of Catalonia.

The cartographic series presented at the 1:25 000 scale cover the entire area of Catalonia, divided into 304 mapsheets, while the geological map of urban areas at 1:5 000 includes municipalities with over 10 000 inhabitants and all capital districts.

This geological cartography series provides a view of the geological environment and the dynamics played out within it, a necessary framework that facilitates the planning of studies and specific detailed actions carried out at the project scale.

Mapsheets published by May 2011

1:25 000 geological map	55
1:25 000 geoanthropic map	2
1:5 000 geological map of urban areas	4
1:25 000 soil map	4
1:25 000 hydrogeological map	1
1:25 000 geological hazard prevention map	11
Special edition: 1:5 000 geological map of Barcelona hills	5
Total published	**82**

OVER 11 MAPSHEETS IN PROGRESS BY MAY 2011

IDEC Sensors geoportal

http://www.geoportal-idec.cat/geoportal/sensors/cat

The IDEC Support Centre has configured a new sectorial spatial data infrastructure, based on web sensors.

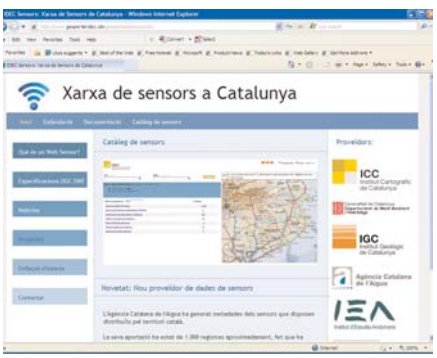
The IDEC Sensors website has been launched with access to different documentary contents, to wit:

what is a Web-Sensor?, the SWE standard of the Open Geospatial Consortium and other links of interest, including the noteworthy access to the IDEC catalogue with records of sensor metadata filtered out from the rest of records.

This new service offers a space within the sectorial projects section of the IDEC geoportal, in addition to direct access from the homepage.

An agreement has been reached with organizations that have sensors distributed throughout Catalonia, by which records of the metadata they describe will be created.

Approximately 2 000 sensor metadata records from the IDEC catalogue have been available for consultation since April 2011.



Actions taken to change the reference system from ED50 to ETRS89

http://www.icc.cat/eng/Home-ICC/Inici/Geodesia/Recursos-geodesics

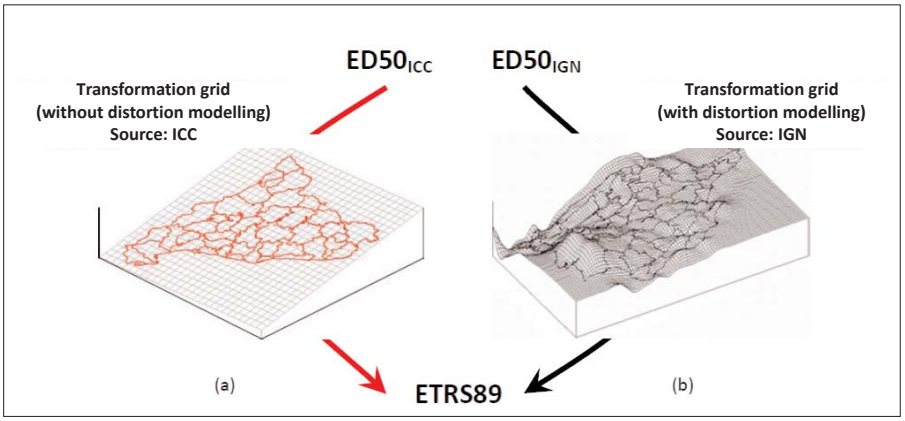
With the INSPIRE Directive, the European Community seeks to promote standardization of European geoinformation. This goal sets the stage for transition to the new ETRS89 reference system in all member states to facilitate interoperability among territories.

Within this context, in Spain, use of the ETRS89 was made official through Royal Decree 1071/2007.

Since the publication of this Decree, the ICC has been working to adapt its products and services to the ETRS89 system, while also expediting transformation of existing products. The methodology used to transform official cartography with scales smaller or equal 1:1 000 was approved by the Cartographic Coordination Commission of Catalonia, and lets users make their transition to ETRS89 in a manner that is consistent with the ICC cartographic databases.

A summary of the actions taken by the ICC along these lines is as follows:

1. Materialization of the ETRS89 reference framework in the utilitarian network of the Integrated Geodetic Positioning System of Catalonia through the densification of the adjustment of the Lower Order Network in Catalonia. The densification has been performed using GPS data from the ICC, and classical data from the IGN, in accordance with the agreement existing between both institutions.
2. Development and officialization of the two-dimensional Helmert geometric transformation to change ED50 coordinates into ETRS89 coordinates.
3. Adaptation of the ICC's production chains and geodetic calculators to ETRS89.
4. Transformation of ICC cartographic products to ETRS89 and distribution of information in ED50 and ETRS89. Plans call for distribution of the two systems until January 2015.
5. Preparation of the ICC web servers to allow the two reference systems.
6. Development of guidebooks to assist transformations. These guidebooks can be consulted in Internet.
7. For the local network and/or 1:500 cartography, work has been done with the respective local councils to determine the optimum way to establish transformation of their cartography.
8. Communication of the change in reference system to professionals through publication of articles and holding meetings and conferences.



The distortion of the IGN transformation (shown with undulations) is due to the use of classical measuring methods. The ICC transformation does not distort the information because it was already constructed with GPS coherence at origin.

Measurement of Catalonia's 100 most emblematic peaks

http://www.icc.cat/vissir2/index.html?lang=eng

At the first Seminar on Cartography and Hiking, held at the headquarters of the ICC in May 2004, and organized by the Institute, Geoestel and Editorial Alpina, the ICC agreed to calculate the real altitudes of Catalonia's most significant peaks, thus taking on board the concerns expressed by event attendees.

The ICC compiled a list of Catalonia's most emblematic mountain peaks, based on criteria such as their geographic significance, stature in the mountain-hiking world or their cultural, historical or emotional importance. The list includes all types of peaks, regardless of their altitude. Their only unifying criterion is that they are all found within the official boundaries of Catalonia. With the selection criteria in mind, the list was sent to the Catalan Federation of Hiking Associations, the Institute of Catalan Studies and the Directorate General of Tourism, to gather their remarks and suggestions.

The measuring processes for the selected peaks had been completed by year-end 2010. The measurements were performed with the latest geodetic calculation techniques, including the position in the terrain of the geodetic benchmarks, which have made it possible to identify each peak's highest natural point.

These measurements have revealed major differences between the altitude considered official until now, and the new altitude resulting from measurement with GPS systems. This project has made it possible to determine the exact altitude of Catalonia's most emblematic peaks.

These measured values will be incorporated into the cartographic series edited by the ICC as new cartographic editions are updated.

Brief notes

DISCONNECTION OF THE RASANT SERVICE

The RASANT service has been making a valuable contribution to improving GPS positioning in Catalonia for the past 15 years. Its implementation made it possible to reduce autonomous GPS positioning error from 100 meters to a metric accuracy in real time throughout the territory of Catalonia.

The discontinuation of selective availability in May 2000 and the launch of the EGNOS service in October 2009 are the reasons why the RASANT service availability no longer makes a significant improvement in autonomous GPS positioning.

In light of these factors, the RASANT service was disconnected the first quarter of 2011.

PRESENTATION OF THE BOOK: APPROACHES TO THE HISTORY OF BARCELONA CARTOGRAPHY

The book *Aproximacions a la història de la cartografia de Barcelona* was presented in the Historical Archive of the City of Barcelona on March 22. It is a co-publication by the Archive and the ICC.

This book is a collection of the presentations given during the conference History of Barcelona Cartography, held in May 2010, as a result of the collaboration between the two institutions.

The book features works by ten specialists from different fields, making it possible to approach different facets of Barcelona's cartographic heritage, accumulated from the 16th to the 20th centuries.

The book explores the changes in the map creation process, and the fact that cartographic results can vary depending on the reasons for the map's creation. The dynamics among these different outlooks make up one of the keys to historical progress.

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

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http://www.icc.cat

Participation of the ICC in the 5th edition of Globalgeo

http://www.firabcn.es

From March 15-17, 2011, the 5th edition of the International Geoinformation Show (Globalgeo) was held in the Montjuïc Exhibition Centre. It was organized by the Fira de Barcelona Convention Authority.

This Show, conceived as an event for professionals and with an international scope, brings together the latest applications, solutions and technologies in geoinformation. This is a market with major growth potential that is offering up prime business opportunities. This year's running had a total of 2 028 attendees (significantly better than the turnout for the prior running, in 2009, which saw 1 424 visitors).

The ICC took active part in the show with its own stand. There, staff members tended to visitors' queries on our activity.

Aside from the stand, the ICC also participated in the organization of various events:

– A meeting of the Spanish Spatial Data Infrastructure Working Group. The first day was scheduled to coincide with the meeting of the ILAF (Iberian and Latin-American Forum group of the Open Geospatial Consortium) and the Interoperability Seminar. On the second day, discussion centred on the situation of INSPIRE, its Directive, and the technical aspects of the work sub-groups in addition to other topics.
– The session entitled "Advantages of national lidar data acquisition", organized by the ICC with the collaboration of the IGN and DIELMO 3D S.L. Lidar technology, its national coverage within the PNOA (National Aerial Orthophoto Project) and its many applications were presented.
– The "4th Seminar of the Organization for Cartographic Cooperation among Autonomous Communities". Meeting of representatives from autonomous communities to share experiences on cartographic information and in their areas of work.
– Working meeting of the Geographic Rules Committee of Specialists. A meeting of technicians and specialists from different national and regional geoinformation-producing organizations, to develop geographic rules with a state-wide scope.
– TGEO 2011 tutorial "From Space to the User". The observation of the Earth was discussed from three different viewpoints: cross-disciplinary, analysis-based and mission design; specific, oriented toward the study of three thematic application areas: agriculture, critical infrastructure and risks; and integrating, offering examples and trends to generate profit and return through Earth observation.
– The 10th edition of the TIG-SIG 2011 Forum "Cities (the City 2.0 of the future: digital, intelligent, innovative, sustainable, creative...)". This event was organized by the ICC and the Catalan Association of Geographic Information Technologies. Analysis focused on the latest research, experiences and new projects in development to improve the geospatial information of cities and make it available to their residents.

The ICC also took part in the 9th running of the International Geomatics Week, "The Future of Maps - the Maps of the Future" with a round of eight presentations dealing with such topics as geodesy, orthophotos, remote sensing, lidar and other sensors. Additionally, in the Speak Corner, a presentation was given on the transition from the ED50 reference system to the ETRS89.