



# International Cartographic Conference

9-16 july · A Coruña 2005 · Spain

Mapping Approaches  
into a Changing World

Iniciativas Cartográficas para  
un Mundo en Transformación

## Programme

[www.icc2005.org](http://www.icc2005.org)



Sociedad Española de Cartografía,  
Fotogrametría y Teledetección.







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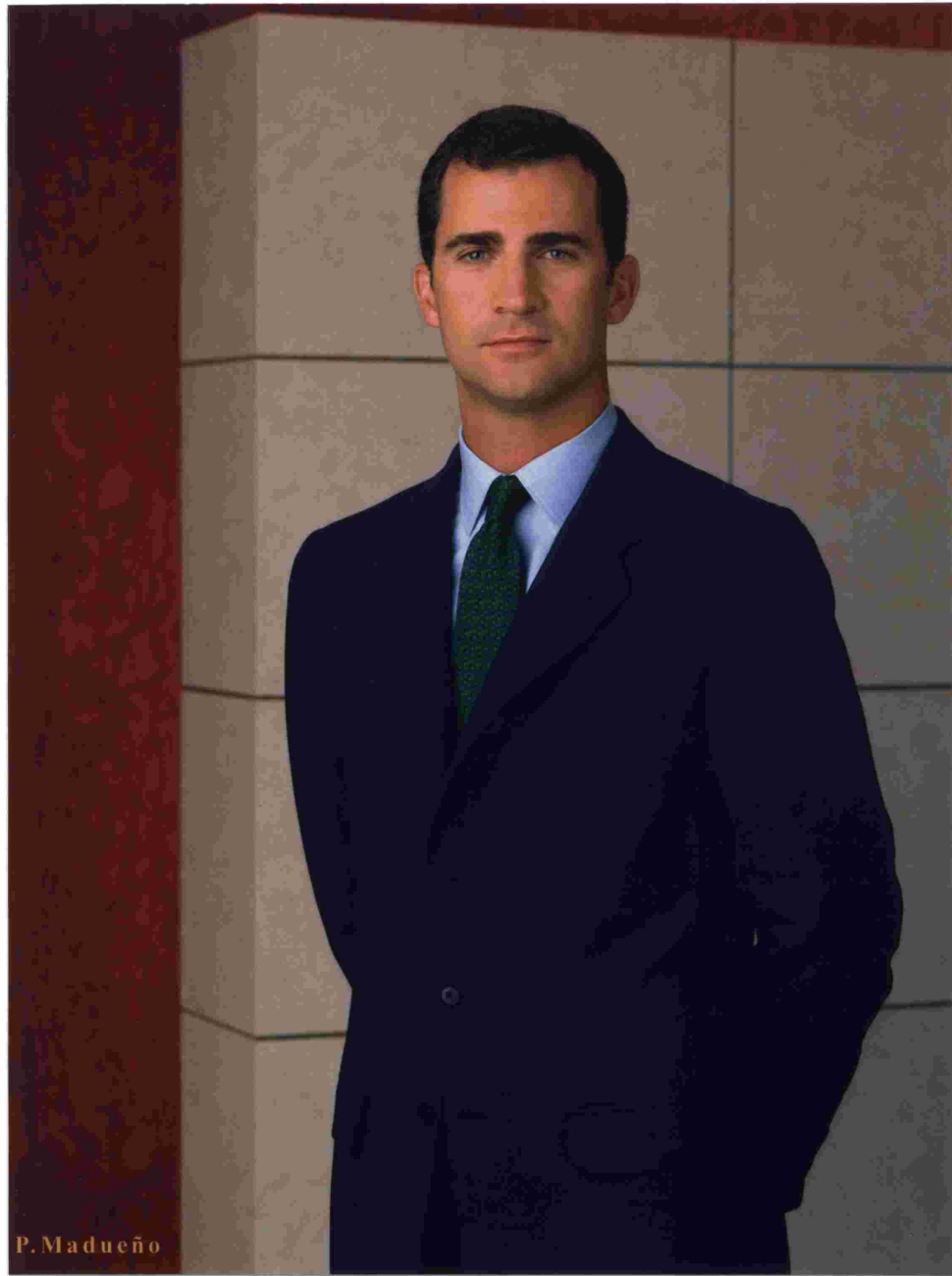
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Con un afectuoso saludo,

Príncipe de Asturias



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Human beings have always needed maps. A guide to indicate the way forward. And throughout history, there has always been someone ready and willing, with the necessary eagerness and excitement, to draw the lines for the rest to follow towards progress. For the 22nd International Cartographic Conference, and with it around two thousand professionals, to come to La Coruña is a source of pride for the city and its inhabitants because here, where the sea is part of our history, we know how to appreciate the value of a good map.

La Coruña has picked up the baton from Durban, where the previous Congress was held, and with it the responsibility for organizing this prestigious Congress which has gathered in our city around two thousand professionals in cartography from over ninety countries throughout the world. Our new Exhibition and Conference Centre is its headquarters and there could be none better as, in addition to its modern installations, it offers visitors an unrivalled view out over the sea and the coastline, the view of an open city that is drawn with water on all sides, a view that is both breathtaking and at the same time familiar and welcoming.

For a few days, you will be able to discuss and analyze the various aspects of the complex science of cartography, as well as the application of new technologies for the development of maps. This very complete conference has room for the multiple specialities of map-making, from nautical charts, physical maps, planetary views and even military maps. There are even maps in new graphic languages and maps adapted to the needs of the disabled.

In any case, this science and art, because map-making is both things at the same time, still requires the interest, enthusiasm and intuition of humans, over and above the technological advances that can be applied to help us improve the position of a line on the map. This is why, apart from the high esteem of the professionals visiting us, it is a great satisfaction for the city of La Coruña to host this International Conference.

It only remains for me to welcome all the participants and to thank you for choosing our city as the backdrop for this convention, as well as to encourage you all to discover the beauties of our city and its cultural and historic treasures.

Francisco Vázquez Vázquez  
Mayor of La Coruña



El ser humano siempre ha necesitado un mapa. Una guía que le indique el camino para avanzar. Y a lo largo de la historia siempre ha habido alguien dispuesto, con la ilusión e interés necesario, para trazar las líneas que el resto debería seguir para progresar. Que el XXII Congreso Mundial de Cartografía llegue a La Coruña, y con su organización unos dos mil profesionales, es un orgullo para la ciudad y para los coruñeses, porque aquí, donde el mar es nuestra historia, se sabe apreciar el valor de un buen mapa.

La Coruña toma el relevo de Durban, sede anterior, y con ello la responsabilidad de organizar este prestigioso Congreso que reúne en nuestra ciudad a unos dos mil profesionales de la cartografía procedentes de noventa países de todo el mundo. El nuevo Palacio de Exposiciones y Congresos es la sede y ninguna podría ser mejor, pues además de sus modernas instalaciones ofrece a los profesionales una vista inigualable, como es la del mar y su costa, la de una ciudad abierta que se dibuja entre aguas, una vista que les resultará a la vez que acogedora y familiar.

Durante unos días van a debatir y analizar los distintos aspectos de la compleja ciencia de la cartografía, así como la aplicación de las nuevas tecnologías en el desarrollo de mapas. Tienen cabida en este completo Congreso las distintas especialidades cartográficas, desde la náutica, la orográfica, la planetaria e incluso la militar. También los nuevos lenguajes y las adaptaciones para personas discapacitadas.

En cualquier caso, esta ciencia y arte, que las dos cosas alcanza a ser la cartografía, sigue necesitado del interés, la ilusión y la intuición del ser humano, más allá de los avances tecnológicos que por su aplicación ayuden a mejorar el trazo en un mapa. Por ello y por el valor de los profesionales que nos visitan, es una satisfacción para La Coruña ser sede de este Congreso Mundial.

Apenas me queda dar la bienvenida a los participantes, agradecerles la elección de nuestra ciudad como escenario de esta convención y animarles también a descubrir la belleza y riqueza cultural e histórica de nuestra ciudad.

Francisco Vázquez Vázquez  
Alcalde de La Coruña

A handwritten signature in black ink, which appears to be 'F. Vázquez', written in a cursive style. The signature is positioned above a long, thin horizontal line that extends across the width of the page.



## International Cartographic Conference

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Dear Colleagues,

It is my great pleasure to share some thoughts with you in connection with the approaching ICC in A Coruña. I am proud to be in this position just as the representatives of world cartography, cartographers and geographic information specialists from science, national mapping agencies, academia, cartographic enterprises, school teachers and all others interested in cartography and geo-information from across our planet will meet in one of the cradles of World cartography. Many missions of discovery started right here in the Pyrenees peninsula. Through the centuries our world has changed, people have acquired more information and knowledge, using new, amazing and previously unforeseeable technologies. We are living now in an era of user-friendly technologies; technologies which can be applied everywhere, in all aspects of our life. I, personally, truly recognise this Pyrenees peninsula as one in which the newest technologies can be combined with the cultural heritage, which is so important for Europe and the whole world.

The ICA is responding to many changes in the contemporary world, especially in human thinking, the collection of data leading to geo-information which is shared through knowledge. The inner life of our organization is animated by discussions about research and applications which will help support our members in their everyday professional lives, i.e. in research, in education and in practice. We are trying to maintain the activity of many excellently working commissions and to start new activities in response to the contemporary problems of humankind - such as the working group on Early Warning and Risk Management Mapping, started this year. Together with the commission on Mapping Africa for Africa it will seek and find solutions primarily for developing countries. We have commissions influencing research frontiers on the global level such as Generalisation and Multiple Representation, Maps and the Internet, Spatial Data Standards, Visualization and Virtual Environments and the recently established Commission on Ubiquitous Mapping. Although I cannot mention every commission I want to assure you all that the efforts of ICA will form a strong component of both global (e.g. Global Map, GSDI, Digital Earth) and regional projects (INSPIRE) and that they will contribute to the geo-spatial knowledge and approaches which until now are very often missing, or underrepresented.

In its outreach activities ICA is aiming more and more at the global problems of our contemporary World. Following the recommendations and results of the United Nations summits and conferences, but introducing our own original concepts and approaches, we want to contribute to the solutions. In 2003 ICA asked its sister organizations such as ISPRS, FIG, IHO, IGU, IMTA, IAG, PAIGH to work together with us to seek a common language and approach leading to closer cooperation toward a very important aim: to provide help in tragic situations such as we saw at the end of last year in the

Indian Ocean when many people were killed by earthquake and tsunami disasters. Many of the victims could have been saved if they had received timely information about the coming emergency. This can only be done on the basis of cooperation between many participants with access to the appropriate data and information.

The Local Organizing Committee has evaluated more than 1000 abstracts received from potential speakers and poster session participants in the A Coruña congress, through the intensively cooperating with commission chairs, vice-chairs and commission and working group members, who all devoted tremendous effort to this task. We have steadily improved the quality of all the papers and other research activities that you, as participants, will be presented with at the congress. As Executive Committee we also would like to inform you of how we plan to fulfil our Strategic Plan approved at the last ICC in Durban.

We will continue with successful and internationally appreciated activities such as the Barbara Petchenik Children's Map Competition, and the Technical Exhibition and Map Exhibition will continue to be vital aspects of the congress. At the initiative of certain member nations, for the first time in the history of ICA, the Executive Committee has decided to arrange an Extraordinary General Assembly in A Coruña. Its purpose will be to decide on the future name of our organisation, and on some changes in the statutes, which will further enhance our activities. We hope that a new name will better reflect our activities and present a better image of our association.

I would also like to inform you that the location of our congress, A Coruña, is one of the most beautiful, cultural and exciting places I visited in my life. The history, the modern aspects of the city, the beautiful landscape of Galicia with its small towns and villages, the historical monuments and geographically exciting places will help set an excellent scene for the celebration of the cartographical results which will come from all over the World. Finally, it is people who are the most important element in our organisation. I am certain that you will find many friends not only among the participants of ICC but also among the delightful and friendly people of A Coruña who will do their best to ensure that our congress will be successful.

**Milan Konecny**  
*President of the International Cartographic Association*

# Presentation of the XXII Conference ICC 2005

## Presentación del XXII Congreso ICC 2005



The International Cartographic Association (ICA), the Spanish Society for Cartography, Photogrammetry and Remote Sensing and the A Coruña Local Organizing Committee for the 22nd International Cartographic Conference have the pleasure of presenting the final programme for the Conference and the 13th General Assembly of the Association. From the 11th to the 16th of July, an ambitious programme of technical sessions on specialized cartography and geographic information topics will be undertaken to improve the global awareness of these sciences.

The programme is based upon the favourable reception given all over the world to our invitation to present abstracts for the selection of papers on the 29 themes proposed for the Conference's scientific programme. This has enabled us to select 540 papers for oral presentations and 210 poster presentations. All of them have been incorporated into the proceedings of the Conference in DVD format. Technical sessions have been scheduled about current themes, especially in fields of general concern, such as spatial data infrastructures, ISO standards and their application to the prevention and mitigation of natural disasters and crisis situations or emergencies affecting the population or the environment, the Galileo-European Navigation System and Aerospace technology and land monitoring.

This Conference is considered as a prime forum and a reference throughout the world for the study and analysis of improvements in cartographic techniques. Every two years this event gathers together the most relevant experts in modern geographical information technologies, professionals, academics and researchers from a large number of universities and representatives of the national mapping agencies with responsibility for the official cartography as well as those engaged in activities in companies dealing with cartography, remote sensing technologies and geographical information systems. A Coruña brings together the hydrographical and topographic communities, with special emphasis on Latin America, on the geo-information community and on continuing education.

The choice of the Conference motto was based on the fact that the global geographic information infrastructures have become an essential element in the development of countries and in the development of added-value applications supported by the huge possibilities afforded by new geographic information technologies. In fact, the fast changes in information technologies are merging with a change in the current economic, industrial and social models. This transformation is considered with great interest by most countries due to the need to manage their policies on land use, environmental conservation and natural resources. Under these circumstances, the value of cartography as an essential source of territorial knowledge and decision-making support takes on great significance. The motto chosen for the Conference expresses this idea and reflects these same interests: "Mapping approaches into a changing world".

Among the scheduled activities in the Conference, the International Map Exhibition stands out. The best maps made by each of the participating countries in the previous years will

be included. This large exhibition will allow the audience to become familiar with the main projects under way worldwide in cartography. On the other hand, as in all the ICA conferences, there will be a Barbara Petchenik Children's World Map Competition, exhibiting the children's maps selected by each country in their own national competitions, as well as a retrospective exhibition of the prize-winners from the last ten years.

The Conference's Technical Exhibition will enable participants to view the latest state-of-the-art equipment for cartography and geographical information. On the other hand it will allow companies in this sector to show their industrial developments as well as meet professionals attending the Conference. It will be an opportunity to get a clear view of the latest development in equipment and space technologies. In this way, the Conference takes two different directions: the first is oriented towards the interchange of knowledge and experiences in geographical information production and research, and the second towards providing companies and professionals with knowledge about new hardware and software tools and equipment.

In this complex society of the future, geographic information technologies will be indispensable tools for the acquisition of territorial knowledge and for the improvement of the population's living conditions. Their contribution will be essential in order to preserve the environment, and to maintain the balance between mankind and the environment, without which life on Earth would not be possible. The efforts of the International Cartographic Conference will be directed towards these objectives.

A Coruña is a very pretty seaside town, with a history that lives on in the present, surrounded by culture and with a warm welcome for visitors. I am sure our city will provide an unforgettable context for everybody; it is a modern city with an efficient university, modern industries and companies with a world-wide presence, a wide year-round programme of cultural activities for all its population. With modern museums directed to the dissemination of Science among young people it is located in a wonderful setting consisting of places of great beauty and natural interest. We hope you enjoy an amazing "cartographical week" these days among us at ICC 2005!

Ramón M. Lorenzo Martínez  
Conference Director  
Vice-President of the ICA and President of the Spanish Society for Cartography,  
Photogrammetry and Remote Sensing





## International Cartographic Conference

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Estimados Colegas,

Es un gran placer para mi el compartir con ustedes algunas ideas relacionadas con el próximo Congreso Internacional de Cartografía de A Coruña. También es un gran honor para mi el ocupar mi actual responsabilidad cuando los representantes del mundo de la cartografía, cartógrafos y especialistas de la información geográfica, procedentes de variados campos científicos, agencias cartográficas nacionales, universidades, empresas cartográficas y otros muchos, simplemente interesados en la cartografía y la información geográfica, de todas las partes del mundo, se van a reunir en una de las cunas del mundo de la cartografía. Muchas de las misiones de los descubrimientos comenzaron aquí en la Península Ibérica. Nuestro mundo ha cambiado mucho a través de los siglos, la población ha adquirido más información y conocimientos utilizando nuevas y sorprendentes tecnologías inimaginables anteriormente. En la actualidad, vivimos en la era de las tecnologías "amigables", susceptibles de aplicarse en cualquier parte y en todos los aspectos de nuestra vida. Personalmente, reconozco a la Península Ibérica como uno de los lugares donde las nuevas tecnologías pueden combinarse adecuadamente con su herencia cultural, lo que es tan importante para Europa y para todo el mundo.

La ICA está respondiendo a los múltiples cambios del mundo actual, especialmente los relacionados con las ideas, la captura de datos destinados a geo-información y conocimientos compartibles. La vida interna de nuestra organización está animada por discusiones relacionadas con la investigación y sus aplicaciones que ayudarán a nuestros miembros en sus vidas profesionales, es decir, tanto en investigación, como en educación o la misma práctica profesional. Estamos intentando mantener las actividades de las muchas y excelentes comisiones de trabajo, así como fomentar nuevas actividades en respuesta a los problemas contemporáneos de la humanidad, como es el grupo de trabajo de "Alertas tempranas y cartografía de riesgos" iniciado este año. Este grupo, junto a la comisión de "Cartografía de África para África", buscarán y encontrarán soluciones para los países en desarrollo principalmente. Tenemos comisiones con capacidad influyente de investigación puntera a nivel mundial en sectores como la generalización y las representaciones múltiples, mapas en Internet, estándares de datos espaciales, visualización y entornos virtuales y la comisión "cartografía ubicua" recientemente establecida.

Aunque no puedo mencionar todas las comisiones, quiero asegurar que todos los esfuerzos de la ICA constituirán un componente importante, tanto de los proyectos globales (p.e. Global Map, GSDI, Digital Earth) como regionales (INSPIRE), y que todos ellos contribuirán a un mayor conocimiento de los conceptos y estrategias geo-espaciales no muy conocidas hasta ahora, o bien infrautilizadas.

Las principales actividades de la ICA están cada vez más dirigidas a los problemas globales del mundo actual. Siguiendo las recomendaciones y resultados de las reuniones y conferencias de las Naciones Unidas, queremos contribuir a sus soluciones, pero introduciendo nuestros propios conceptos y estrategias. En 2003, la ICA pidió a sus asociaciones hermanas tales como ISPRS, FIG, IHO, IMTA, IAG y PAIGH, el trabajar conjuntamente para

desarrollar un lenguaje y estrategia común para una mejor cooperación en el cumplimiento de un objetivo muy importante: proporcionar ayuda en situaciones trágicas como la ocurrida a finales del año pasado en el océano Índico, cuando muchas personas murieron por los desastres causados por los terremotos y tsunamis. Muchas de las víctimas podrían haber sobrevivido en caso de haberse recibido información sobre emergencias a su debido tiempo. Esto sólo puede conseguirse en base a la cooperación mutua con acceso a los datos e información adecuada.

El comité organizador local ha evaluado más de 1000 "abstracts" de posibles ponentes y participantes en sesiones poster en el Congreso de la Coruña, a través de la cooperación intensa con los presidentes de las comisiones, vicepresidentes, así como miembros de los grupos y comisiones de trabajo, todos los cuales dedicaron un gran esfuerzo a esta tarea. Hemos mejorado firmemente la calidad de todas las ponencias y actividades de investigación que ustedes, como participantes, podrán comprobar y disfrutar en el Congreso. Por otra parte, al Comité Ejecutivo nos gustaría informar de cómo planeamos llevar a cabo nuestro Plan Estratégico aprobado en el Congreso Internacional de Durban. Continuaremos con las actividades exitosas, e internacionalmente reconocidas, tales como el concurso de mapas para niños Barbara Petchenik, la exposición técnica y la exposición de mapas, por ser éstos aspectos vitales del congreso.

Por la iniciativa de miembros de distintas naciones, y por primera vez en la historia de la ICA, el Comité Ejecutivo ha decidido organizar una Asamblea General extraordinaria en La Coruña. Su objetivo será decidir el futuro nombre de la organización, así como realizar algunos cambios en los estatutos para mejorar los resultados de nuestras actividades. Esperamos y deseamos que un nuevo nombre presente mejor nuestras actividades actuales y refleje una mejor imagen internacional de nuestra asociación.

También me gustaría destacar que la localización de nuestro Congreso, A Coruña, es uno de los lugares más bonitos, lleno de encantos y atracciones culturales y paisajísticas, que he conocido en mi vida. Su historia, los aspectos modernos de la ciudad, el maravilloso paisaje de Galicia con sus pequeños pueblos y ciudades, sus monumentos históricos y atractivos parajes geográficos, contribuirán a un excelente escenario para la celebración del congreso con participantes de todo el mundo. Finalmente, son las personas quienes constituyen el elemento más importante de nuestra organización. Estoy seguro que usted encontrará muchos amigos, no sólo entre los participantes del congreso ICC2005, sino también entre la excelente y entrañable gente de A Coruña, quienes harán todo lo posible para asegurar que nuestro congreso sea un éxito.

Milan Konecny  
Presidente de la Asociación Cartográfica Internacional



# Presentation of the XXII Conference ICC 2005

## Presentación del XXII Congreso ICC 2005



La Asociación Cartográfica Internacional (ICA), la Sociedad Española de Cartografía, Fotogrametría y Teledetección (SECFYT) y el Comité Local de Organización de la XXII Conferencia Cartográfica Internacional tienen la satisfacción de presentar el Programa de la Conferencia y la XIII. Un ambicioso programa de sesiones técnicas en materia de cartografía y de información geográfica que serán abordados, entre los días 11 y 16 de julio próximos, con el objetivo de mejorar e impulsar el conocimiento a escala global de estas ciencias.

Este programa se basa en la favorable acogida que ha tenido en todos los países del Mundo la invitación a la presentación de abstracts para seleccionar las ponencias, dentro de los 29 temas propuestos, para el programa científico del Congreso. Esta iniciativa nos ha permitido seleccionar 540 presentaciones orales y 210 presentaciones poster. Todas ellas se recogerán en la documentación del Congreso en una publicación DVD. De manera complementaria se programarán sesiones técnicas sobre temas de actualidad, de forma especial en aquellos campos de interés general, como son las infraestructuras de datos espaciales y su aplicación a la prevención y mitigación de desastres naturales y de situaciones de crisis o emergencias que afecten a la población o a su medio ambiente, el sistema europeo de navegación por satélite-Galileo y las tecnologías aeroespaciales para el conocimiento territorial.

Este Congreso tiene la consideración de primer foro y referencia mundial en el estudio y análisis de los avances en las técnicas cartográficas. Reúne cada dos años a los expertos más destacados en las modernas tecnologías de la información geográfica, a los profesionales, a los representantes académicos e investigadores de numerosas universidades, a los equipos directivos los institutos geográficos y de las agencias cartográficas productoras de la cartografía oficial y también a los que desarrollan su actividad en el mundo empresarial de la cartografía, la teledetección y los sistemas de información geográfica. Se reunirán en A Coruña las comunidades de la hidrografía y de la topografía, con especial énfasis en Latinoamérica, así como de la información geográfica y en materia de formación.

La elección del lema del Congreso se realizó teniendo presente que las infraestructuras globales de información geográfica se han convertido en un elemento esencial en el desarrollo de los países y en el soporte básico sobre el que se desarrollaran aplicaciones de valor añadido, apoyadas en las enormes posibilidades que permiten las nuevas tecnologías de la información geográfica. De hecho el cambio acelerado que se está produciendo en las tecnologías de la información es coincidente con un cambio en los modelos económicos, industriales y sociales. Esta transformación se vive con un creciente interés en la mayor parte de los países por la necesidad de gestionar sus políticas territoriales, la conservación de su medio ambiente y de sus recursos naturales. En estas circunstancias el valor de la cartografía como fuente esencial de conocimiento territorial cobra un gran valor. El lema elegido para el Congreso expresa esta idea y refleja estas mismas inquietudes: "Iniciativas cartográficas para un Mundo en transformación".

Hay que destacar entre las actividades programadas dentro del Congreso la Exposición Mundial de Cartografía. En ella se recogerán los mejores mapas realizados en los años anteriores por cada uno de los países participantes. Esta magna exposición permitirá conocer los principales proyectos de la cartografía mundial. Por otra parte se llevará a cabo, como sucede en todos los congresos de la ICA, un concurso internacional de mapas infantiles que se expondrán en A Coruña recogiendo los mapas que envía cada país, seleccionados en los correspondientes concursos nacionales, así como una exposición retrospectiva de los galardonados en los últimos diez años.

La celebración de una exposición técnica permitirá que las empresas de este sector muestren sus desarrollos industriales y presenten sus avances tecnológicos y a sus profesionales asistentes al Congreso. En ella se podrá obtener una clara visión del desarrollo del sector y también las novedades en equipamiento. De esta forma se le dan al Congreso dos diferentes orientaciones. La primera de ellas dirigida a intercambiar conocimientos y experiencias en la producción e investigación geográfica y la segunda a facilitar el conocimiento de nuevos equipamientos a empresas y profesionales.

En la compleja sociedad del futuro las tecnologías de la información geográfica serán instrumentos indispensables al servicio del conocimiento territorial y de la mejora de las condiciones de vida de la población. Su contribución será esencial para conseguir la conservación de su medio ambiente, y el mantenimiento del equilibrio entre el hombre y su entorno, sin el que no sería posible la misma vida en la Tierra. A estos objetivos se dirigirán los esfuerzos del Congreso Mundial de Cartografía.

Decir finalmente que A Coruña es una ciudad abierta al mar, llena de recuerdos históricos y culturales, que vive con intensidad el presente y recibe con gran hospitalidad a todos los visitantes. Estoy seguro de que nuestra ciudad ofrecerá un recuerdo imborrable para todos los participantes. Es una ciudad moderna con una Universidad eficiente, modernas industrias y empresas de implantación mundial; que al mismo tiempo desarrolla un amplio programa de actividades culturales que llegan a toda su población. Cuenta también con modernos museos orientados a la divulgación del mundo científico entre los jóvenes. Está rodeada de un paisaje espléndido y de numerosos lugares de gran belleza natural. Espero que puedan disfrutar con nosotros de una magnífica "semana cartográfica" en ICC 2005.

Ramón M. Lorenzo Martínez  
Director del Congreso  
Vice-presidente de la ICA y Presidente de la Sociedad Española de Cartografía,  
Fotogrametría y Teledetección



## XXII Congreso Mundial de Cartografía / XXII International Cartographic Conference

### Presidente de Honor / Honorary President

S.A.R. el Príncipe de Asturias / H.R.H the Prince of Asturias

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Ramón M. Lorenzo Martínez  
*President of the Spanish Society for  
Cartography, Photogrammetry and Remote  
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Rodolfo Núñez de las Cuevas

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Laszlo Zentai (HU)

#### • Spanish Members

Fernando Aranaz del Río  
Miguel A. Bernabé  
Ángel Chans Ferreiro  
Emilio Chuvieco Salinero  
Josep Lluís Colomer i Alberich  
Jordi Corbera Simón  
José González-Cebrián Tello  
Julio Palacio Rabanedo  
Augusto Pérez Alberti  
Rufino Pérez Gómez  
Mónica Ruiz Bustos  
Pilar Sánchez-Ortiz Rodríguez  
José Sancho Comín

# Commissions and Committees

## A Coruña Local Organizing Committee

- **Organization and Programme**

Isabel Suárez de Centi Pedreira

- **Technical Secretary**

Mariano Franco del Amo  
Yolanda Pantín Calviño  
Victoria Lemp  
Julia Cueto Parada  
Inés Alcalá Baillie

- **Press and Media**

Rosa González-Cebrián Toba

- **Organization Secretary**

Montserrat Fraguío Couto

- **Marketing**

Global Congressos

- **Children's Camp**

Museos Científicos Coruñeses  
Asociación de Amigos de los Museos Científicos

- **Web and Graphic Design**

Jose DelaFuente Igualada

- **Travel Agency**

Ciberviaxes

- **Design and Production of Exhibitions**

Marva Group

## International Cartographic Association Executive Committee

- **President**

Milan Konecny (Czech Republic)

- **Secretary-General**

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Kirsi Virrantaus (Finland)

- **Past-President**

Bengt Rystedt (Sweden)

- **Volunteers Coordinator**

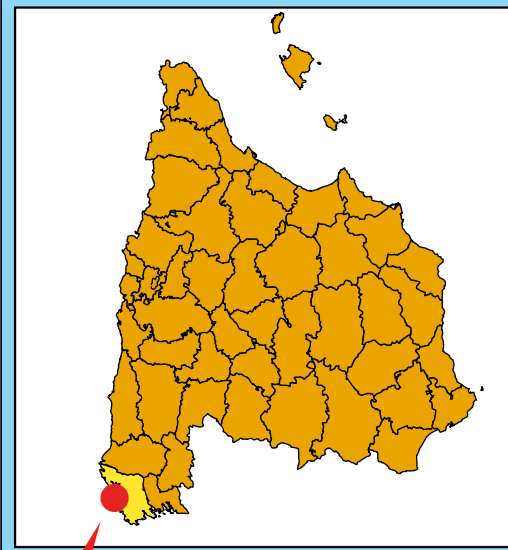
María J. Iniesto Alba

- **Volunteers Team**

Álvarez Lozano, Juan	Alberto
Ávila Búa, Alejandro	Iglesias Martínez, Cristina
Buján Seoane, Sandra	López Abad, Cristina
Camarero Suárez de Centi, Miguel.	Martínez Danis, Jennifer
Cañizares Sánchez, Alicia	Montero Iglesias, Paula
Carballal Rial, Natalia	Núñez Dopico, Sara
Carreira Carral, Eva	Núñez Moldes, José
Castiñeira Anido, Beatriz	Paradelo Lois, José Manuel
Castro Besteiro, Inmaculada	Pereira Núñez, José Manuel
Castro del Valle, María	Pérez Mauriz, Olga
Couto López, Isabel	Roca Carbón, José Manuel
Díaz Fernández, M <sup>a</sup> del Pilar	Rodríguez Álvarez, Ana
Fernández Novas, Alejandro	Rodríguez Fraguio, Jacobo
Fernández Castro, Pablo.	Rodríguez Rodríguez, Carlos
Folgueiras Fernández, Ana	Alberto
Freijo Rodríguez, Marcos	Sánchez Valiño, Iván
Gea Veño, Pedro	Sobrino Áres, David
González Pérez, Daniel	Tejederas Abad, Olga
González Santos, Luís	Varela Abelleira, Abel

# A CORUÑA

# A CORUÑA



Escala 0 50 100 m



- Vías principales
- Calles peatonales
- Zonas verdes
- Edificios de interés

- Iglesia
- Hospital
- Aparcamiento
- Punto de Información
- Gasolinera

- A Palacio de Congresos
- 1 Hesperia Finisterre
- 2 Tryp Coruña
- 3 NH Atlántico
- 4 Meliá María Pita
- 5 Hesperia Coruña
- 6 AC Coruña
- 7 Barceló Coruña
- 8 Zenit Coruña
- 9 Ciudad de La Coruña
- 10 Husa Center
- 11 Riazor
- 12 Plaza
- 13 España
- 14 Residencia Riata
- 15 Residencia Siglo XXI



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# Registration Fees

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## Technical Secretary

Global Congressos  
c/Torreiro 13-15, 6ºD · A Coruña 15003 - Spain  
Tel: +34 981 208 990  
Fax: +34 981 208 701  
secretary@icc2005.org  
www.icc2005.org

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## Registration fees categories.

	Until 30th April 2005	From 30th April 2005
Full participant	460,00 €	520,00 €
Students / Senior	230,00 €	260,00 €
Accompanying person	140,00 €	160,00 €
Only One Day	200,00 €	200,00 €

Students must be less than 30 year old by 1st July 2005 and should include proof of their student status. Seniors must be 65 years or older by 1st July 2005 and should include a copy of the related page of their passport.

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## Registration fee of participants, full time students and seniors will include:

- Attendance to the Conference.
  - Conference documents, bag, badge, CD/DVD of the Conferences, certificate of attendance.
  - Participation in the Opening and Closing Ceremonies and Welcome Reception.
  - Participation in the Exhibitors' Reception.
  - Lunch and Coffee-Breaks from Monday 11th to Friday 15th July at the Conference venue.
- 

## Registration fee for accompanying people includes:

- Attendance to the Opening and Closing Ceremonies and Welcome Reception.
  - Special bag, badge, touristic brochures, city maps.
  - Participation in the Exhibitors' Reception.
  - Meeting room with coffee and tea.
  - Lunch and Coffee-Breaks from Monday 11th to Friday 15th July at the Conference venue.
- 

## Registration for one day:

Registration for only one day can be made before 15th June 2005 registration fee for only one day is 200,00€. This fee includes:

- Participation in the Conference during that day.
  - Credential.
-





**International  
Cartographic  
Conference**  
July 9-16 A Coruña 2005 Spain

# Registration and Conference Entitlements

## REGISTRATION AND CONFERENCE ENTITLEMENTS

### IDENTIFICATION

Conference identity badges must be worn at all times during the Conference and for all social functions. Persons not wearing badges will not gain access to Conference session / activities or to the Exhibition.

### TECHNICAL SECRETARY ICC 2005 REGISTRATION AND MATERIAL PICKUP

#### Venue:

Registration Desk at Congress Centre (Palexco) in the Technical Secretary ICC 2005.

#### Timetable:

Monday, July 11th	09,00 – 17,00
Tuesday, July 12th	09,00 – 17,00
Wednesday, July 13th	09,00 – 17,00
Thursday, July 14th	09,00 – 17,00
Friday, July 15th	09,00 – 17,00
Saturday, July 16th	09,00 – 15,30

### CONFERENCE IDENTITY BADGES

C	Delegates
A	Accompanying Persons
E	Exhibitors
M	Media
O	Organization
V	Visitors





International  
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Conference

July 9-16 A Coruña 2005 Spain

# Themes for the Conference

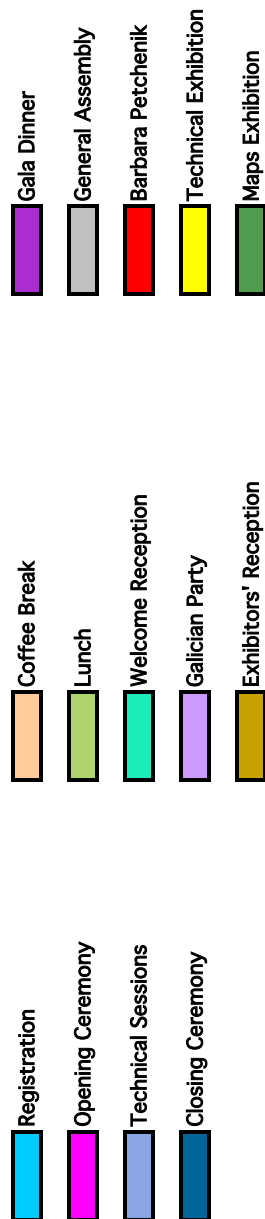
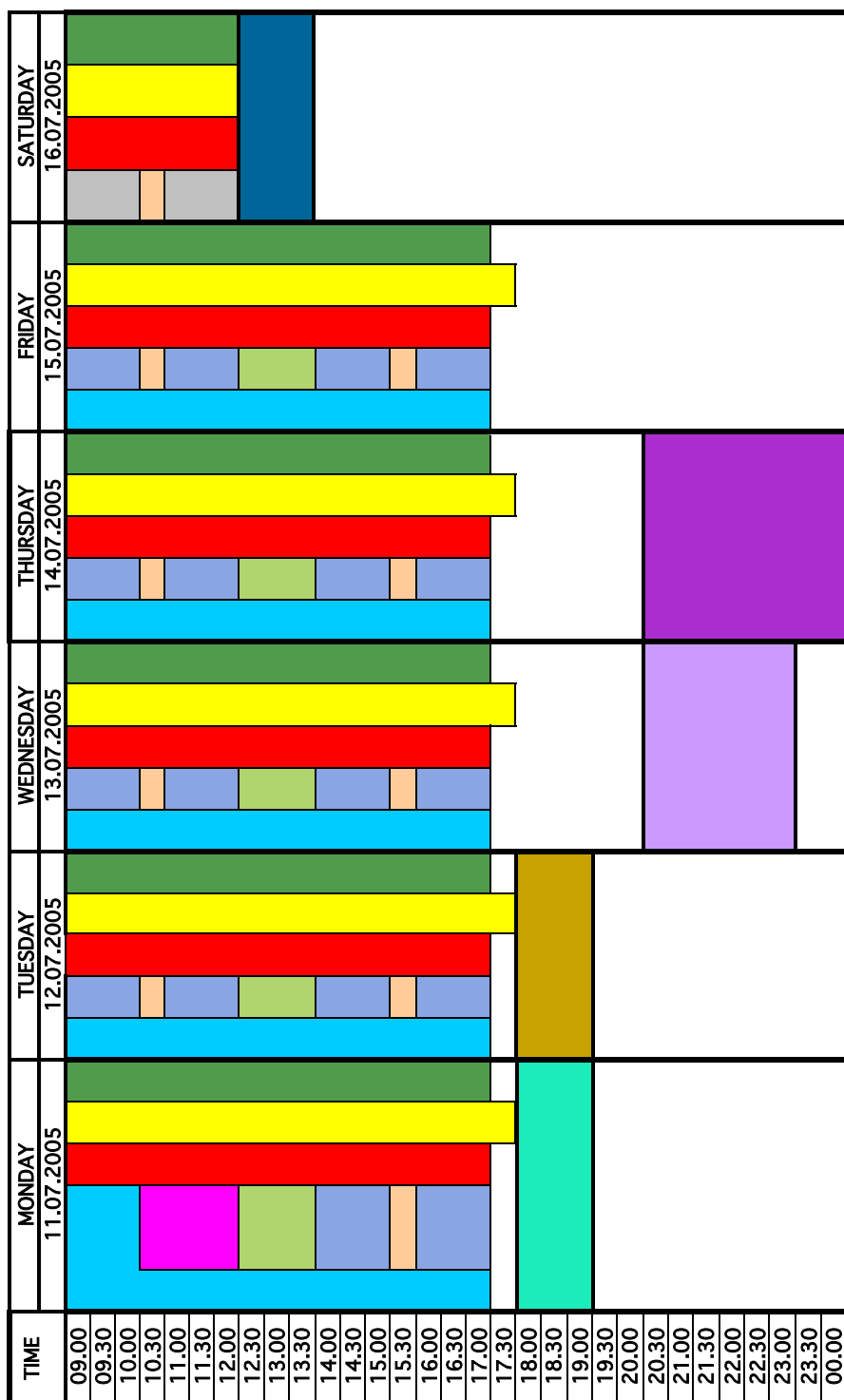
Theme 1:	THEORETICAL CARTOGRAPHY.	Theme 16:	HISTORY OF CARTOGRAPHY.
Theme 2:	MAP PROJECTIONS.	Theme 17:	WORLD AND AERONAUTICAL CARTOGRAPHY AND MILITARY MAPPING.
Theme 3:	MAP DESIGN AND PRODUCTION.	Theme 18:	MOUNTAIN CARTOGRAPHY.
Theme 4:	EDUCATION AND TRAINING IN CARTOGRAPHY. INTERNET COURSES.	Theme 19:	TOURIST CARTOGRAPHY.
Theme 5:	DIGITAL CARTOGRAPHY AND GIS FOR SUSTAINABLE DEVELOPMENT OF TERRITORIES.	Theme 20:	CARTOGRAPHY AND CHILDREN. EDUCATIONAL PRODUCTS.
Theme 6:	SPATIAL DATA INFRASTRUCTURES (NSDI, GSDI AND SDI). DEVELOPMENT, STANDARDS, PRICES AND COPYRIGHT.	Theme 21:	GENDER AND UNDER-REPRESENTED GROUPS AND CARTOGRAPHY.
Theme 7:	DATA CAPTURE AND QUALITY ASSESSMENT OF SPATIAL DATA.	Theme 22:	MAPS FOR THE BLIND AND VISUALLY IMPAIRED.
Theme 8:	INCREMENTAL UPDATING AND VERSIONING OF SPATIAL DATA BASES.	Theme 23:	PLANETARY CARTOGRAPHY.
Theme 9:	CARTOGRAPHIC GENERALIZATION AND MULTIPLE REPRESENTATION.	Theme 24:	RESEARCH AND DEVELOPMENT: NEW PRODUCTS AND CARTOGRAPHIC SYSTEMS.
Theme 10:	CARTOGRAPHY AND SATELLITE IMAGERY FOR THE MANAGEMENT OF NATURAL RESOURCES AND THE ENVIRONMENT.	Theme 25:	HISTORY OF COLONIAL CARTOGRAPHY IN THE 19TH AND 20TH CENTURIES.
Theme 11:	MAPS AND THE INTERNET.	Theme 26:	OTHER THEMES: CARTOGRAPHY AND ADVERTISING, MAPS IN THE MEDIA, CENSUS CARTOGRAPHY, CADASTRAL MAPS, THREE DIMENSIONAL MAPPING, NEW CONCEPTS IN CARTOGRAPHIC SYMBOLOGY, SPACE AND TIME IN GIS, TOPONYMY.
Theme 12:	INTERNET LOCATION-BASED SERVICES, MOBILE MAPPING AND NAVIGATION SYSTEMS.	Theme 27:	ORIENTEERING MAPS.
Theme 13:	MARINE CARTOGRAPHY, NAVIGATION AND OCEAN MAPPING.	Theme 28:	GEOSPATIAL ANALYSIS AND MODELLING.
Theme 14:	NATIONAL AND REGIONAL ATLASES. ELECTRONIC ATLASES. THEMATIC AND MULTIMEDIA CARTOGRAPHY.	Theme 29:	EARLY WARNING AND RISK MANAGEMENT.
Theme 15:	VIRTUAL MODELS, VISUALISATION, ANIMATION AND CARTOGRAPHY.		



**International  
Cartographic  
Conference**

July 9-16 A Coruña 2005 Spain

# Schedule





# Technical Sessions

## Oral Presentations

### July 11<sup>th</sup>

Monday 11th	14,00-15,30	16,00-17,30
Room 1-1 (77pax)	T.25 S.1	T.25 S.2
Room 2-1 (77pax)	T.24 S.1	T.24 S.2
Room 3-2 (100pax)	T.13 S.1	T.13 S.2
Room 4-2 (100pax)	T.6 S.1	T.6 S.2
Room 5-2 (100pax)	T.9 S.1	T.9 S.2
Room 6-2 (100pax)	T.7 S.1	T.7 S.2
Room 7-2 (100pax)	T.16 S.1	T.16 S.2
Room 8-2 (500pax)	T.5 S.1	
Room 1-3 (80pax)	Chair Meeting	
Room 2-3 (80pax)		

### July, 12<sup>th</sup>

Tuesday 12th	09,00-10,30	11,00-12,30	14,00-15,30	16,00-17,30
Room 1-1 (77pax)	T.25 S.3	T.27 S.1	T.23 S.1	T.23 S.2
Room 2-1 (77pax)	T.4 S.1	T.4 S.2	T.9 S.3	T.9 S.4
Room 3-2 (100pax)	T.13 S.3	T.8 S.1	T.21 S.1	T.21 S.2
Room 4-2 (100pax)	T.6 S.3	T.17 S.1	T.20 S.1	T.20 S.2
Room 5-2 (100pax)	T.26 S.1	T.19 S.1	T.19 S.2	T.19 S.3
Room 6-2 (100pax)	T.24 S.3	T.24 S.4	T.24 S.5	T.26 S.2
Room 7-2 (100pax)	T.26 S.5	T.16 S.3	T.16 S.4	T.16 S.5
Room 8-2 (500pax)	T.5 S.3	T.5 S.4	Tec. Sess. 1*	
Room 1-3 (80pax)	Chair Meeting			
Room 2-3 (80pax)				

*Technical Session 1 \*: ISO Standard Workshop. Joint "ICA Standard Commission and ISO/TC 211"*

### July, 13<sup>th</sup>

Wednesday 13th	09,00-10,30	11,00-12,30	14,00-15,30	16,00-17,30
Room 1-1 (77pax)	T.4 S.3	T.4 S.4	T.4 S.5	T.23 S.3
Room 2-1 (77pax)	T.1 S.1	T.1 S.2	T.9 S.5	T.9 S.6
Room 3-2 (100pax)	T.2 S.1	T.2 S.2	T.11 S.1	T.11 S.2
Room 4-2 (100pax)	T.6 S.4	T.6 S.5	T.20 S.3	T.20 S.4
Room 5-2 (100pax)	T.3 S.1	T.3 S.2	T.26 S.3	T.26 S.4
Room 6-2 (100pax)	T.10 S.1	T.10 S.2	T.15 S.1	T.15 S.2
Room 7-2 (100pax)	T.14 S.1	T.14 S.2	T.14 S.3	T.14 S.4
Room 8-2 (500pax)	T.5 S.5	T.5 S.6	Tec. Sess. 2*	
Room 1-3 (80pax)	Chair Meeting			
Room 2-3 (80pax)				

*Technical Session 2 \*: "Cartography in the SDI Changing World".*

*"The role of SDI and cartography in our contemporary world for monitoring and disaster alleviation"*

### July, 14<sup>th</sup>

Thursday 14th	09,00-10,30	11,00-12,30	14,00-15,30	16,00-17,30
Room 1-1 (77pax)	T.7 S.3	T.7 S.4	T.15 S.3	T.15 S.4
Room 2-1 (77pax)	T.1 S.3	T.1 S.4	T.9 S.7	
Room 3-2 (100pax)	T.11 S.3	T.11 S.4	T.11 S.5	T.11 S.6
Room 4-2 (100pax)	T.6 S.6	T.6 S.7	T.12 S.1	T.12 S.2
Room 5-2 (100pax)	T.3 S.3	T.3 S.4	T.3 S.5	T.17 S.2
Room 6-2 (100pax)	T.14 S.5	T.14 S.6	T.14 S.7	T.14 S.8
Room 7-2 (100pax)	T.10 S.3	T.10 S.4	T.10 S.5	
Room 8-2 (500pax)	T.5 S.7	T.5 S.8	T.5 S.9	Tec. Sess. 3*
Room 1-3 (80pax)	Chair Meeting			
Room 2-3 (80pax)				

Technical Session 3 : "Aerospace Technologies and Land Monitoring".

### July 14<sup>th</sup> - 17,30-18,30h – Room 8-2

"International Space Station as a tool of science".  
Pedro Duque, Spanish astronaut from European Space Agency (ESA).

### July, 15<sup>th</sup>

Friday 15th	09,00-10,30	11,00-12,30	14,00-15,30	16,00-17,30
Room 1-1 (77pax)	T.7 S.5	T.7 S.6		T.15 S.9
Room 2-1 (77pax)	T.10 S.6	T.10 S.7	T.5 S.10	T.29 S.3
Room 3-2 (100pax)	T.6 S.8	T.28 S.1	T.11 S.7	
Room 4-2 (100pax)	T.12 S.3	T.12 S.4	T.12 S.5	T.12 S.6
Room 5-2 (100pax)	T.3 S.6	T.3 S.7	T.18 S.1	T.18 S.2
Room 6-2 (100pax)	T.15 S.5	T.15 S.6	T.15 S.7	T.15 S.8
Room 7-2 (100pax)	T.22 S.1	T.22 S.2	T.22 S.3	
Room 8-2 (500pax)	T.29 S.1	T.29 S.2	Tec. Sess. 4*	
Room 1-3 (80pax)	Chair Meeting			
Room 2-3 (80pax)				

Technical Session 4\* : « European Navigation Systems from the Industrial Perspectives ».  
« European Navigation Systems from the User's Perspectives ».

### July, 16th

Saturday 16th	09,00-10,30	11,00-12,30
Room 1-3 & 2-3	General Assemblies ICA/ACI	

# Technical Sessions

## Oral Presentations

### THEME 1: THEORETICAL CARTOGRAPHY.

#### SESSION 1: Wednesday 13 (Room 2-1) 09:00 – 10:30. Chair: Wolodtschenko, A.

"FROM WHERE DOES THE CONTENT OF A CERTAIN GEO-COMMUNICATION COME? SEMIOTICS IN WEB-BASED GEO-COMMUNICATION." Brodersen, L. (Denmark).

"AN INFORMATION MODEL FOR MAPS: TOWARDS CARTOGRAPHIC PRODUCTION FROM GIS DATABASES" Buckley, A. (USA), Frye, C. and Buttenflied, B.

"CARTOGRAPHY IS STILL SUPREME" Wood, M. (United Kingdom).

"USING FMRI IN CARTOGRAPHIC RESEARCH" Lobben, A. (USA), Olson, J. M. and Huang, J.

#### SESSION 2: Wednesday 13 (Room 2-1) 11:00 – 12:30. Chair: Schlichtmann, H.

"IN SEARCH FOR MODELS OF CARTOGRAPHIC REPRESENTATION" Beconyte, G. (Lithuania) and Govorov, M.

"MAPPING BETWEEN MAPS – ASSOCIATION OF DIFFERENT THEMATIC CONTENTS USING SITUATION THEORY" Tomai, E. (Greece) and Kavouras, M.

"DASYMETRIC MAPPING FOR DISAGGREGATING COARSE-RESOLUTION POPULATION DATA" Mennis, J. (USA) and Hultgren, T.

#### SESSION 3: Thursday 14 (Room 2-1) 09:00 – 10:30. Chair: Brodersen, L.

"INTEGRATION OF CARTOGRAPHY, GEOINFORMATICS AND REMOTE SENSING AND GEOIMAGES OF THE FUTURE" Berlyant, A.M. (Russia).

"THE GENERAL THEORY OF CARTOGRAPHY UNDER THE ASPECT OF SEMIOTICS" Komedchikov, N.N. (Russia).

"THE LAW OF CONSERVATION OF MAP SPACE FOR PORTRAYAL AND GENERALISATION" Edwardes, A. (Switzerland).

"CARTOGRAPHY AND SPATIAL COGNITION: COGNITIVE MAPPING OF THE GEOGRAPHICAL SPACE KNOWLEDGE" Ismael, L. (Brazil) and Menezes, P.

#### SESSION 4: Thursday 14 (Room 2-1) 11:00 – 12:30. Chair: Edwardes, A.

"THE CARTOGRAPHIC RECOGNIZING METHOD IN THE LIGHT OF THE LINGUISTIC CONCEPTION OF THE MAP LANGUAGE" Neytchev, P. (Poland).

"SEMIOTICS AND GENERALIZATION: FACTS, DECISION, AND ACTION SPACES" Kremers, H. (Germany).

"THE INFLEXIBILITY OF THE CARTOGRAPHIC SPACE" Fonseca, F.

"DESINGING POINT MAP SYMBOLS: THE EFFECT OF PREATTENTIVE ATTRIBUTES OF SHAPE" Michaelidou, E. (Greece), Petropoulou, A. and Filippakopoulou, V.

"AUTOMATED LABEL PLACEMENT FOR GROUPS OF ISLANDS" Schlechter, T. (The Netherlands) and van Kreveld, M.

### THEME 2: MAP PROJECTIONS.

#### SESSION 1: Wednesday 13 (Room 3-2) 09:00 – 10:30. Session matter: "MAP PROJECTION TRANSFORMATION" Chair: Canters, F.

"MULTI MAP PROJECTION IN MODERN CARTOGRAPHY" Helali, H. (Iran), Alesheikh, A.A. and Hamrah, M.

"THE DESIGN AND IMPLEMENTATION OF MAP PROJECTION TRANSFORMATION COMPONENT BASED ON COM" Huang, M. (China) and Du, Q.

"CONFORMAL TRANSFORMATION OF CO-ORDINATES IN NIGERIA" Ufuah, M.E. (Nigeria) and Adesina, J.G.

"PECULIARITIES OF THE UTM PROJECTION: CHANGING THE UTM ZONE THEORY AND ITS APPLICATION CHARACTERIZED IN SIGNIFICANT STAGES." Ferrer Torio, R. (Spain), Piña Patón, B., Sánchez Espeso, J, deLuis Ruiz J.M, Ruiz Bedia. M.L, Pereda garcía, R, Castillo López, E. and Bayarri Cayón, V.

"ON-DEMAND PROJECTING LARGE RASTER DATASETS IN GIS" Xu, H. (USA) and Zhou, X.

#### SESSION 2: Wednesday 13 (Room 3-2) 11:00 – 12:30. Session matter: "MAP PROJECTION DISTORSION" Chair: Strebe, D.

"A NEW APPROACH FOR DESIGNING ORTHOPHONIC WORLD MAPS" Canters, F. (Belgium), Deknopper, R. and De Genst, W.

"THE ROLE OF MAP PROJECTION IN COGNITION OF GEOGRAPHIC AREA" Battersby, S.E. (USA).

"CONFORMAL PROJECTION WITH MINIMAL DISTORTIONS" Pedzich, P. (Poland).

"USING MAP PROJECTIONS WITHOUT CHANGING THE WORLD" Mekenkamp, P. (The Netherlands).

### THEME 3: MAP DESIGN AND PRODUCTION.

#### SESSION 1: Wednesday 13 (Room 5-2) 09:00 – 10:30. Chair: Lilley, B.

"THE COMPARISON OF ESTIMATION'S RESULTS OF CARTOGRAPHICAL IMAGES OBTAINED BY DIFFERENT METHODS" Nyrtsova, T. (Russia) and Strizhkin, I.

"GENERATING OF THE MEDIUM – SCALE STATE MAP SERIES DERIVED FROM GIS IN THE CZECH REPUBLIC" Borkovcova, J. (Czech Republic) and Svobodova, D.

"CONCEPTUAL CONSIDERATIONS FOR A NEW MAP SERIES 1: 100 000 OF AUSTRIA" Ditz, R. (Austria).

#### SESSION 2: Wednesday 13 (Room 5-2) 11:00 – 12:30. Chair: Brewer, C.

"ARCGIS TOOLS FOR PROFESSIONAL CARTOGRAPHY" Murad-al-shaikh, M.A. (USA).

"STRUCTURE AND DEVELOPMENT OF A KNOWLEDGE BASE FOR CARTOGRAPHIC COMPOSITION" Tsoulos, L. (Greece) and Stefanakis, K.

"AUTOMATED PLACEMENT OF STREET NAMES ON A CITY MAP" Qing Sheng, G. (China), Xiao Li, L. and Zhi Ge, J.

"EFFECTIVE PRODUCTION ENVIRONMENT FOR GEOGRAPHIC DATABASE MAINTENANCE AND MAP PRODUCTION" Davidsson, F. (Sweden).



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**SESSION 3: Thursday 14 (Room 5-2)**

09:00 – 10:30. Chair: Harju, E.-S.

“CROSS-BORDER MAPPING – EXPERIENCES WITH GEODATA AND GEONAMES” Witschas, S. (Germany).

“INTERNATIONAL BORDER DEMARCATION: TOPOGRAPHIC MAP SERIES ON SHORTEST DEMAND AND WITH HIGHEST QUALITY” Schroth, R. (Germany) and Arnold, H.

“AUTOMATED SELECTION OF TOPOGRAPHIC BASE INFORMATION FOR THEMATIC MAPS.” Kannish, R. (United Kingdom) and Forrest, D.

“A FULLY INTEGRATED INFORMATION SYSTEM TO MANAGE CARTOGRAPHIC AND GEOGRAPHIC DATA AT 1:25,000 SCALE” Rodríguez Pascual, A.F. (Spain) and García Asensio, L.

**SESSION 4: Thursday 14 (Room 5-2)**

11:00 – 12:30. Chair: Davidsson, F.

“AN EFFICIENT GENETIC ALGORITHM APPROACH FOR AUTOMATED MAP LABELLING” Hong, F. (China), Kaijun, L. and Zuxun, Z.

“SUPPORTING INTERACTIVE EDITING OF CARTOGRAPHIC REPRESENTATIONS IN GIS SOFTWARE” Eicher, C. (USA) and Briat, M.

“THE QUALITY ASSESSMENT OF THE CARTOGRAPHIC VISUALIZATION OF THEMATIC MAPS IN ATLASES: AN APPROACH FOR DEFINING PARAMETERS.” Vansteenvoort, L. (Belgium) and De Maeyer, P.

**SESSION 5: Thursday 14 (Room 5-2)**

14:00 – 15:30. Chair: Virrantaus, K.

“AUTOMATIC METRO MAP DESIGN TECHNIQUES” Stott, J.M. (United Kingdom) and Rodgers, P.

“TOPICAL MAP DESIGN FOR RESEARCH, EDUCATION AND PRODUCTION WITH DESKTOP-PUBLISHING-SYSTEM EXTENSIONS” Hutzler, E. (Switzerland) and Werner, M.

“DEVELOPING THE ILLUSTRATED WORLD ATLAS” Anderson, S. (Australia) and Cartwright, W.

**SESSION 6: Friday 15 (Room 5-2) 09:00 –**

**10:30.** Chair: De Maeyer, P.

“CARTOGRAPHIC DESIGN PRINCIPLES FOR 3D MAPS: A CONTRIBUTION TO CARTOGRAPHIC THEORY” Haeberling, C. (Switzerland).

“COMPARISON OF GIS AND GRAPHICS SOFTWARE FOR ADVANCED CARTOGRAPHIC SYMBOLIZATION AND LABELING” Brewer, C.A. (USA) and Frye, C.

“PRACTICAL MAP RHETORIC” Denil, M. (USA).

**SESSION 7: Friday 15 (Room 5-2) 11:00 –**

**12:30.** Chair: Tefft, W.

“NATIONAL MAPPING ORGANISATIONS IN NATIONAL DEVELOPMENT” Nag, P. (India).

“DESIGN OF PORTABLE PAPER MAPS ENABLING LONGITUDINAL ACCES” Miura, K. (Japan)

“THE ROLE OF MODERN CARTOGRAPHY IN ORDNANCE SURVEY (GB)” Lilley, B. (United Kingdom).

“REDESIGN OF THE SWISS NATIONAL MAP SERIES” Kreiter, N. (Switzerland).

**Theme 4:**

**EDUCATION AND TRAINING IN  
CARTOGRAPHY. INTERNET  
COURSES.**

**SESSION 1: Tuesday 12th (Room 2-1)**

09:00 – 10:30. Session matter:

“E-LEARNING” Chair: Fraser, D.

“USING CONCEPT MAPPING TO DESIGN REUSABLE LEARNING OBJECTS FOR e-EDUCATION IN CARTOGRAPHY AND GIS” DiBiase, D. (USA)

“DEVELOPMENT OF AN INTERACTIVE E-LEARNING AND E-TESTING TOOL FOR TECHNICAL ASPECTS IN GEO-SCIENCES”

Brondeel, M. (Belgium), De Wolf, N., Verbeken, J., Antrop, M. and De Maeyer, P.

“VIRTUAL LANDSCAPES: AN INTERACTIVE E-LEARNING ENVIRONMENT” Katterfeld, C. (Germany)

“E-LEARNING COURSES IN CARTOGRAPHY AND GIS.” Konstantinidis, A. (Greece), Rannalis, D., Vergos, G. and Kazakis, P.

**SESSION 2: Tuesday 12th (Room 2-1)**

11:00 – 12:30. Session matter:

“DISTANCE/WEB-BASED LEARNING” Chair: Feldmann, H.-U.

“DEVELOPMENT OF THE ICA-SPONSORED INTERNET CARTOGRAPHY TEACHING PROGRAMME” Fraser, D. (Australia) and Zentai, L.

“TEACHING GI STANDARDS IN HIGHER EDUCATION – EXAMPLES FROM DISTANCE AND CLASSROOM TEACHING” Reinhardt, W. (Germany)

“COMPUTER ASSISTED LEARNING IN CARTOGRAPHY AND GIS FIELDS” Nitu, C. (Romania)

“WEB BASED EDUCATION IN CARTOGRAPHY AND GI SCIENCE – TOWARDS AN OPEN-CONTENT SOLUTION” Werner, M. (Switzerland), Bleisch, S. and Fisler, J.

**SESSION 3: Wednesday 13th (Room 1-1)**

09:00 – 10:30. Session matter: “PROJECT BASED LEARNING” Chair: Zentai, L.

“CARTOGRAPHIC PRODUCTION: LEARNING THROUGH A REAL PROJECT.” Coll, E. (Spain), Irigoyen, J., Martinez, J. and Velasco, E.

“PROJECT-BASED CARTOGRAPHIC LEARNING IN AN ADVANCED TECHNOLOGY CLASSROOM” Bailey, B. (USA)

“RESEARCH IN THE FIELD OF TOPOGRAPHIC MAPPING AND THE USE OF TOPOGRAPHIC MAPS IN CARTOGRAPHIC TRAINING” Savinykh, V.P. (Russia), Vereshchaka, T.V., Kurbatova, I.E. and Portnov, A.M.

“GAME OF ORIENTATION USING CARTOGRAPHY IN OUR NATURAL PARK IN ALCALA DE HENARES, MADRID (TEACHERS AND STUDENTS FROM “ISIDRA DE GUZMAN SECONDARY SCHOOL”)” Zapatero Cabañas, E. (Spain)

**SESSION 4: Wednesday 13th (Room 1-1)**

11:00 – 12:30. Session matter: “SPATIAL DATABASE APPLICATIONS” Chair: Pérez Gómez, R.

“AWARENESS AND EDUCATION IN SPATIAL DATA USE-NEED OF THE HOUR” Bhat, M.V. (India)

“THE DIGITAL MAP LIBRARY” Hedlund, U. (Sweden) and Rystedt, B.

**SESSION 5: Wednesday 13th (Room 1-1)**

14:00 – 15:30. Session matter: “COUNTRY BASED PERSPECTIVES ON CARTOGRAPHIC EDUCATION” Chair: Tikunov, V.

# Technical Sessions

## Oral Presentations

"GIS CROSSING NATIONAL BOARDERS - GIS A2E, A EUROPEAN UNION CORPORATE GIS TRAINING PROGRAM (GEOGRAPHICAL INFORMATION SYSTEM AND AGRICULTURAL EDUCATION IN EUROPE)" Söderberg, M. (Sweden)

"INFORMATION SYSTEMS AND DIGITAL CARTOGRAPHY FOR SPATIAL PLANNING IN POLAND" Korelski, K. (Poland)

"CARTOGRAPHIC EDUCATION IN INDIA: A MAJOR STEP IN NEW MILLENIUM" Oraon, A. (India) and Singh, K.P.

"GIS EDUCATION IN POLAND POPULARISATION OF THE GENERAL GEOGRAPHIC DATABASE" Iwaniak, A. (Poland) and Olszewski, R

### THEME 5:

## DIGITAL CARTOGRAPHY AND GIS FOR SUSTAINABLE DEVELOPMENT OF TERRITORIES.

#### SESSION 1: Monday 11th (Room 8-2)

14:00 – 15:30. Session matter: "RURAL LANDSCAPE" Chair: Borrero, S.

"APPLICATION OF GIS FOR THE DESIGN OF A MULTI-PURPOSE GREENWAYS NETWORK IN OLEIROS (A CORUÑA, SPAIN)" Ortiz Sanz, J. (Spain), López Rodríguez, A. and Corbelle Rico, E.

"APPLICATION GEOGRAPHICAL INFORMATION SYSTEM (GIS) IN THE DEFINITION OF RESIDENTIAL APTITUDE OF THE RURAL LANDSCAPE" Pino Silva, F. (Chile) and Zárate Campaña, E.

"A SEMI AUTOMATED APPROACH FOR GIS BASED ON GENERATION OF TOPOGRAPHIC ATTRIBUTES FOR LANDFORM CLASSIFICATION" Metternicht, G. (Australia), Klingseisen, B. and Paulus, G.

#### SESSION 3: Tuesday 12th (Room 8-2)

09:00 – 10:30. Session matter: "LAND MANAGEMENT (2)" Chair: Mezcano, J.

"OPEN SOURCE SPATIAL DECISION SUPPORT SYSTEM FOR SUSTAINABLE WATER MANAGEMENT" Niederer, S. (Austria), Kriz, K. and Pucher, A.

"THE USE OF CARTOGRAPHY AND GIS TECHNOLOGIES TO IMPROVE THE MANAGEMENT OF NON-GOVERNMENTAL ORGANIZATIONS. THE «RED DEPORTE Y COOPERACIÓN» CASE STUDY." Pérez, R. (Spain)

"URBAN LAND EVALUATION MODEL AND ITS INFORMATION SYSTEM DESIGN IMPLEMENTATION" Yaolin, L. (China) and Yanfang, L.

"SPATIAL DATABASES APPLIED TO THE DYNAMIC CHARACTERIZATION OF THE CLIMATE" Zancajo Jimeno, J. J. (Spain) and Mostaza Pérez, T.

"THE NEED FOR COLLABORATION IN MAPPING IN NIGERIA: THE EXAMPLE OF CITY MAP UPDATE" Akinyemi, F. (Germany)

#### SESSION 4: Tuesday 12th (Room 8-2)

11:00 – 12:30. Session matter: "LAND MANAGEMENT (3)" Chair: Niederer, S.

"DYNAMIC STUDY OF THE HYDRIC EROSION OF SOUL. APPLICATIONS TO THE PROVINCE OF ALMERIA (SPAIN)" Zancajo Jimeno, J. J. (Spain) and Mostaza Pérez, T.

"GEOLOGICAL MAPPING OF THE BARENTS SEA USING GIS" Suetova, I. (Russia), Ushakova, L. and Lemenkova, P.

"SPATIAL DATA BASED SYSTEM FOR COASTAL PLACER CONCENTRATION: A CASE STUDY AT KALLAR – VEMBAR COAST, TAMILNADU" Rajamanickam, M. (India) and Rajamanickam, G.V.

"THE RELEVANCE OF GEOINFORMATICS IN AGRICULTURAL DEVELOPMENT: THE CASE OF NIGERIA" Lawal Rilwani, M. (Nigeria)

"PROJECT «IMPROVEMENT OF THE SYSTEMS OF CARTOGRAPHY OF THE COLOMBIAN TERRITORY»" Boada Rodríguez, A. (Colombia)

#### SESSION 5: Wednesday 13th (Room 8-2)

09:00 – 10:30. Session matter: "LAND MANAGEMENT (4)" Chair: Borrero, S.

"EVOLUTION OF URBAN DEVELOPMENT AND PROTECTION OF NATURAL SPACES IN THE LITTORAL OF VALENCIAN COMMUNITY (SPAIN): CARTOGRAPHIC STUDY BY A GEOGRAPHIC INFORMATION SYSTEM" Altur, V. (Spain) and Sanchis, J.A.

"3D MULTI-TEMPORAL GIS FOR THE MANAGEMENT OF ENVIRONMENTAL RESOURCES" Malinverni, E.S. (Italy), Tonelli, E.P. and Mussio, L.

"PLANNING SUSTAINABLE AGRICULTURE IN THE CARIBBEAN HUMID TROPICS OF COSTA RICA USING GIS" Giraldo, M.A. (USA)

"CONCEPTUAL MODEL OF THE SPANISH LAND COVER AND USE INFORMATION SYSTEM USING UML (UNIFIED MODEKING LANGUAGE)" Valcárcel Sanz, N. (Spain)

#### SESSION 6: Wednesday 13th (Room 8-2)

11:00 – 12:30. Session matter: "LAND INFORMATION" Chair: Forrest, D.

"GEOMADRID PROJECT" Sáenz de Pipaón y Mengs, I. (Spain)

"A COMMON DESIGN FOR OFFICIAL TOPOGRAPHIC MAPS IN EUROPE?" Hopfstock, A. (Germany)

"CROATIAN TOPOGRAPHIC INFORMATION SYSTEM (CROTIS)" Divjak, D. (Croatia)

#### SESSION 7: Thursday 14th (Room 8-2)

09:00 – 10:30. Session matter: "SUSTAINABLE DEVELOPMENT" Chair: Tikunov, V.

"DIGITAL CARTOGRAPHY AND GIS, DECISION TOOLS FOR SUSTAINABLE DEVELOPMENT IN CUENCA PROVINCE (CENTRAL SPAIN)" Martínez-Vega, J. (Spain), Martín, P. and Romero-Calcerrada, R.

"CADASTRAL MAPS AND GIS FOR SUSTAINABLE ECONOMIC DEVELOPMENT OF KOSOVA" Meha, M. (Serbia & Montenegro)

"SUSTAINABLE FUTURES THROUGH INTEGRATED DATA COLLECTION" Platt, M. (Australia)

"GIS AND TELEDETECTION AS FOCALIZING INSTRUMENTS FOR SOCIAL INVESTMENT" Agugliano, R.L. (Argentina), Fernández, A., Martínez, S. and Fernández, S.

#### SESSION 8: Thursday 14th (Room 8-2)

11:00 – 12:30. Session matter: "TECHNOLOGICAL DEVELOPMENTS" Chair: Fairbairn, D.J.

"STRATEGIC PLANNING IN TERRITORIAL MANAGEMENT" Peña Penabad, J.M. (Spain) and Cid Fernández, R.



**International  
Cartographic  
Conference**  
July 9-16 A Coruña 2005 Spain

"THE SPANISH OFFICIAL 1:25.000  
CARTOGRAPHY: MILESTONES, ACHIEVEMENTS  
AND NEXT LEAPS FORWARD" García Asensio,  
L. (Spain)

CARTOGRAPHIC STUDY OF SPATIAL STRUCTURE  
OF PHENOMENA USING FRACTAL GEOMETRY"  
Klimczak, H. (Poland)

"gvSIG. OPEN SOURCE, CARTOGRAPHY AND  
NEW MARKETS" Anguix, A.A. (Spain)

"AN INTEGRATED APPROACH TO BUILD A  
SUSTAINABLE LAND INFORMATION  
MANAGEMENT SYSTEM-THE INDIAN  
EXPERIENCE" Bhat, M.V. (India)

"MAPPING THE PAST AND PRESENT OF OUR  
HERITAGE: CARTOGRAPHIC REPRESENTATION  
OF TRADITIONAL MEDITERRANEAN  
IRRIGATION SYSTEMS" Hermosilla, J.  
(Spain) and Pascual, J.

**SESSION 9: Thursday 14th (Room 8-2)**

**14:00 – 15:30.** Session matter:  
"TERRITORIAL APPLICATIONS" Chair:  
Nyapola, H.

"A GEOGRAPHIC VISUALIZATION OF THE  
GROWTH OF SUBURBANIZATION IN  
THESSALONIKI VIA MULTIVARIATE  
THEMATIC CARTOGRAPHY." Myrdis, M.  
(Greece), Karanikolas, N. and Ramnalis, D.

"DASYMETRIC POPULATION DENSITY MAP OF  
POLAND" Bielecka, E. (Poland)

"THE CHANNEL MAINTENANCE MANAGEMENT  
SYSTEM BASED ON GIS" Zongyi, H. (China)  
and Lin, Z.

"APPLICATION OF GEOGRAPHICAL  
INFORMATION SYSTEM TO THE PROCESS OF  
THE COMBINED AGRARIAN INSURANCE"  
Parra Galant, G. (Spain), García Gonzalez,  
J.F. and Cordero Gracia, J.

**SESSION 10: Friday 15th (Room 2-1)**

**14:00 – 15:30.** Session matter:  
"TERRITORIAL APPLICATIONS (1)" Chair:  
Chuvieco, E.

"COMMON DIGITAL BOUNDARY BETWEEN  
NORWAY AND SWEDEN" Persson, I.  
(Sweden) and Lien, K.

"«NEGATIVE» AND «POSITIVE» SPATIAL  
PLANNING APPROACHES BY MEANS OF GIS"  
Rana, S. (Switzerland) and Salmeron, D.

"A STUDY OF URBAN LAND IN THE  
METROPOLITAN AREA OF GUADALAJARA:  
THE EXPANSION OF THE PERIPHERY  
BETWEEN 1970 AND 2000; USING DIGITAL  
MAPPING AND GIS" Cruz Solís, H. (Mexico),  
Jiménez Huerta, E., Rábago Anaya, J.J and  
Palomar, M.d.P.

"POLITICAL ADMINISTRATIVE EVOLUTION OF  
RIO DE JANEIRO STATE - BRAZIL" Leal de  
Menezes, P.M. (Brazil), Costa, B., Fragoso,  
L. and Lepore, V.

**THEME 6:  
SPATIAL DATA  
INFRASTRUCTURES (NSDI,  
GSDI AND SDI).  
DEVELOPMENT, STANDARDS,  
PRICES AND COPYRIGHT.**

**SESSION 1: Monday 11th (Room 4-2)**

**14:00 – 15:30.** Session matter:  
"CONCEPTUAL MODELLING AND SDI  
DEVELOPMENT" Chair: Moellering, H.

"DEVELOPING A MODELLING FOR THE SPATIAL  
DATA INFRASTRUCTURE" Hjelmager, J.  
(Denmark), Danko, D., Cooper, A., Huet,  
M., Delgado, T., Aalders, H., Martynenko,  
A. and Moellering, H.

"RELATIONSHIPS OF CARTOGRAPHY,  
GEOGRAPHIC INFORMATION SYSTEMS AND  
THE MEXICAN SPATIAL DATA  
INFRASTRUCTURE (IDEmex)" Hansen. F.  
(Mexico)

"HOW THE MAPPING SCIENCE COMMITTEE  
SUPPORTS THE NSDI IN THE UNITED  
STATES" Cowen, D.J. (USA)

**SESSION 2: Monday 11th (Room 4-2)**

**16:00 – 17:30.** Session matter:  
"METADATA ELEMENTS AND PROCESSING"  
Chair: Danko, D.

"CATALOGUING GEOGRAPHICAL DATA  
PROCESSING TOOLS- CONCEPTION AND  
EXPLOITATION OF A METADATA MODEL" Abd-  
el-Kader, Y. (France)

"CHINA PROFILE OF THE INTERNATIONAL  
STANDARD: GEOGRAPHIC INFORMATION -  
METADATA" Jingtong, J. (China) and  
Ruomei, L.

"MODELLING HETEROGENEOUS AND  
DISTRIBUTED SPATIAL DATASETS IN AN  
UPDATE CONTEXT" Pierkot, C. (France),  
Mustiere, S., Ruas, A., Hameurlain, A. and  
Raynal, L.

"INTEGRATED HIERARCHICAL METADATA  
PROPOSAL: SERIES, LAYER, ENTITIES AND  
ATTRIBUTES" Zabala, A. (Spain) and Masó, J.

**SESSION 3: Tuesday 12th (Room 4-2)**

**09:00 – 10:30.** Session matter: "QUALITY  
ELEMENTS FOR SDI PRODUCTS" Chair:  
Martynenko, A.

"QUALITY ELEMENTS FOR CARTOGRAPHIC DATA  
PRODUCTS" Virrantaus K. (Finland) and  
Korhonen, K.

"AUTHENTICATION, CHARACTERIZATION, AND  
CONTROL METHODS FOR CARTOGRAPHIC  
DATA" Rice, M. (USA)

"EUROPEAN REFERENCE DATASETS FOR  
EUROPEAN SPATIAL DATA INFRASTRUCTURE  
- STATE OF THE ART AND DEVELOPMENT OF  
COMMON SPECIFICATIONS" Jakobsson, A.  
(Finland)

**SESSION 4: Wednesday 13th (Room 4-2)**

**09:00 – 10:30.** Session matter: "NATIONAL  
SDI DEVELOPMENTS – 1" Chair: Cooper, A.

"NEW VISIONS OF SPATIAL INFORMATION  
SERVICE FRAMEWORK" Jiang, J. (China), Li,  
D., Yi, H. and Wang, W.

"IDEE: THE NATIONAL SPATIAL DATA  
INFRASTRUCTURE OF SPAIN." Mas Mayoral,  
S. (Spain)

"GEOSPACIAL SERVICES IN NORTHERN  
GERMANY – ALL IN ONE" Matthias, E.  
(Germany)

"NATIONAL SPATIAL DATA INFRASTRUCTURE  
FOR INDIA" Siva Kumar, R. (India)

"IS ALIGNMENT THE SAME AS MATCHING:  
INTEGRATION FROM A CARTOGRAPHIC  
PERSPECTIVE" Harvey, F. (USA)

**SESSION 5: Wednesday 13th (Room 4-2)**

**11:00 – 12:30.** Session matter: "NATIONAL  
SDI DEVELOPMENT-2" Chair: Huet, M.

"NAVARRRE SPATIAL DATA INFRASTRUCTURE  
(IDENA)" Clerigué, R. (Spain), Fontano, S.,  
Sabando, C. and Lacunza, F.



# Technical Sessions

## Oral Presentations

"THE IDEE (SPANISH NDSI) GEOPORTAL: TECHNICAL ASPECTS OF AN EMERGING REALITY" Rodríguez Pascual, A.F. (Spain), López Romero, E., Abad Power, P. and Sánchez Maganto, A

"THE CUBAN SPATIAL DATA INFRASTRUCTURE AS THE BACKBONE OF THE NATIONAL GEOGRAPHICAL PORTAL." Delgado Fernández, T. (Cuba)

"SURVEY OF INDIA PROVIDES FRAMEWORK SPATIAL DATA ESSENTIAL FOR DEVELOPING - NATIONAL SPATIAL DATA INFRASTRUCTURE" Kumar, G. (India)

### **SESSION 6: Thursday 14th (Room 4-2)**

**09:00 – 10:30.** Session matter: "DATA COLLECTION FOR SDI IMPLEMENTATION" Chair: Colomer, J.L.

"EUROGEONAMES – THE VISION OF INTEGRATED GEOGRAPHICAL NAMES DATA WITHIN A EUROPEAN SDI" Zaccheddu, P. (Germany) and Sievers, J.

"3D CARTOGRAPHIC DATA COLLECTION FOR GIS ENVIRONMENTS" Mauro, C. (Italy)

"PRODUCTION OF DIGITAL CARTOGRAPHY AS A SUPPORT TO THE NATIONAL CENSUS. A GEOSTATISTICAL STRATEGY TO BUILD THE COLOMBIAN SPATIAL DATA INFRASTRUCTURE" Arias, L.P. (Colombia)

"MANAGEMENT OF GEOGRAPHICAL INFORMATION FOR LOCAL ADMINISTRATIONS" Velasco, E. (Spain), Martínez, J.C., Irigoyen, J. and Coll, E.

### **SESSION 7: Thursday 14th (Room 4-2) 11:00**

**– 12:30.** Session matter: "SDI DATA POLICY FOR DATA SHARING" Chair: Aalders, H.

"NEW MARKETS; NEW WAYS TO SALE AND COPYRIGHTS IN THE SDI FRAMEWORK" Guimet, J. (Spain)

"GEODATA POLICY IN AUSTRIA" Kainz, W. (Austria)

"ESTABLISHING THE ENVIRONMENT FOR SHARING GEOGRAPHIC INFORMATION IN CHINA" Liu, R. (China) and Jiang, J.

### **SESSION 8: Friday 15th (Room 3-2) 09:00**

**– 10:30.** Session matter: "EMERGING SDI COMPONENTS" Chair: Delgado, T.

"SPATIAL MODELS OF TERRAIN: NEW STATE STANDARD OF RUSSIAN FEDERATION" Martynenko, A. (Russia)

"EUROROADS – A PAN-EUROPEAN ROAD DATA SOLUTION" Wallberg, M. (Sweden)

"OPENSOURCE COMPONENTS FOR GEOSPATIAL PORTAL." Manso, M. (Spain) and Bernabé, M.

"CORRECTION OF RELIEF INVERSION EFFECT IN WEB MAP SERVER IMAGES" Bernabé, M. (Spain) and Manso, M.

## **THEME 7:**

## **DATA CAPTURE AND QUALITY ASSESSMENT OF SPATIAL DATA.**

### **SESSION 1: Monday 11th (Room 6-2)**

**14:00 – 15:30.** Chair: Arozarena, A.

"CLASSIFICATION OF FEATURES IN HIGH-RESOLUTION AERIAL PHOTOGRAPHS USING NEURAL NETWORKS" Paluszynski, W. (Poland), Iwaniak, A., Kubik, T. and Tymkow, P.

"DETECTION, CONFIRMATION AND VALIDATION OF CHANGES ON SATELLITE IMAGE SERIES. APPLICATION TO LANDSAT 7" Martínez, L. (Spain), Joaniquet, M., Palà, V. And Arbiol, R.

"EVALUATION OF THE GEOMETRICAL QUALITY OF THE SATELLITE CARTOGRAPHY WITH LANSAT 7 BASE." Goldar, J. E. (Argentina), Gulotta, J. L., Costa, W. D. and Gutierrez, C. A.

### **SESSION 2: Monday 11th (Room 6-2)**

**16:00 – 17:30.** Chair: Trainor, T.

"PROPAGATION OF DEM UNCERTAINTY: AN INTERVAL ARITHMETIC APPROACH." Gonçalves, G. (Portugal) and Santos, J.

"GRID DIGITAL ELEVATION MODELS ACCURACY. ANALYSIS AND MODELIZATION" Aguilar, F. J. (Spain), Aguilar, M. A., Agüera, F., Carvajal, F. and Sánchez, J.

"METHODOLOGY FOR THE DEVELOPMENT OF A SAMPLING RECOMMENDATION WHEN USING LINEAR ELEMENTS FOR POSITIONAL QUALITY CONTROL" Ariza López, F. J. (Spain) and Mozas Calvache, A. T.

"POSITIONAL ACCURACY CONTROL USING ROBUST ESTIMATORS" Atkinson Gordo, A. D. J. (Spain), Ariza López, F. J. and García-Balboa, J. L.

### **SESSION 3: Thursday 14th (Room 1-1)**

**09:00 – 10:30.** Chair: Verrantaus, K.

"THE MAF/TIGER ENHANCEMENT PROGRAM: THE MECHANICS AND MAINTENANCE OF A LARGE-SCALE NATIONAL SPATIAL DATABASE" Trainor, T. (USA)

"THE NATIONAL AERIAL ORTOPHOTO PROGRAM IN SPAIN" Arozarena Villar, A. (Spain) and Villa Alcázar, G.

"A NATIONAL DATABASE TO BE PROUD OF" Greenway, I. (Ireland), Bray, C. and Hallahan, P.

### **SESSION 4: Thursday 14th (Room 1-1)**

**11:00 – 12:30.** Chair: McMaster, R.

"UNCERTAINTIES IN GIS WITH A USER'S PERSPECTIVE" Söderberg, M. (Sweden)

"UNCERTAINTY RASTER-MAP ESTIMATION BY MEANS OF STOCHASTIC SIMULATION: A NEW SPATIAL METADATA APPROACH" Felicísimo, A.M. (Spain) and Cuartero, A.

"DEALING WITH UNCERTAINTY IN LARGE-SCALE URBAN AND CADASTRAL DATABASES" Drecki, I. (New Zealand) and Maciejewska, I.

"OPTIMIZATION OF VECTOR DATA CAPTURE AND QUALITY ASSESSMENT" Iribas, M. (Spain), Huarte, A., Velasco, X. and Clerigué, R.

"THE PROPAGATION OF POSITIONAL ERROR INDUCED BY LI-OPENSHAW ALGORITHM" Mei, S. (China) and Jiang, N.

"INTEGRATING DATA LAYERS TO SUPPORT THE NATIONAL MAP OF THE UNITED STATES" Usery, E.L. (USA), Finn, M.P. and Starbuck, M.

### **SESSION 5: Friday 15th (Room 1-1) 09:00**

**– 10:30.** Chair: Jiménez, E.

"ABOUT QUALITY OF SPATIAL DATA IN A NEW DIGITAL LAND COVER HIGH SCALE MAP OF GALICIA (SPAIN)" Chantada Acosta, J. R. (Spain), Casciani, M., Caamaño, A., Alvarez, C., Fernandez, P., Lopez, A.

"QUALITY ASSESSMENT OF THE CORINE LAND COVER 2000 DATA BASE IN SPAIN" Ruiz Bustos, M. (Spain), Del Bosque González, I., Villa Alcázar, G. and Arozarena Villar, A.

"THE QUALITY CONTROL OF VECTOR MAP DATA" Fanghua, W. (China) and Pingzhi, L. Jincheng



"QUALITY FUNCTION DEPLOYMENT: AN EXAMPLE OF THE APPLICATION OF THE HOUSE OF QUALITY (HOQ) TO CARTOGRAPHY" Ariza López, F.J. (Spain), García Balboa, J.L. and Fernández Oliveras, P.

"THE PROCESSES OF CONTROL OF QUALITY OF THE GEOGRAPHIC AND TERRITORIAL INFORMATION" Pizarro Hernández, B. (Spain)

**SESSION 6: Friday 15th (Room 1-1) 11:00 – 12:30.** Chair: Corbera, J.

"GEOMOBIL: ICC LAND BASED MOBILE MAPPING SYSTEM FOR CARTOGRAPHIC DATA CAPTURE" Alamús, R. (Spain), Baron, A., Bosch, E., Casacuberta, J., Pla, M., Sánchez, S., Serra, A. and Talaya, J.

"ON THE USE OF AIRBORNE LASER SCANNING DATA TO VERIFY AND ENRICH ROAD NETWORK FEATURES" Hatger, C. (Germany)

"A NEW APPROACH TO RELIEF REPRESENTATION" Ramírez, J.R. (USA)

"ANALYSIS OF SLOPE TO STUDY EROSION" Ramos Galán, M.I. (Spain), Feito Higuera, F.R. and Gil Cruz, A.J.

"LITTO 3D" Louvart, L. (France), Ehrhold, A. and Grateau, C.

## THEME 8:

### INCREMENTAL UPDATING AND VERSIONING OF SPATIAL DATA BASES.

**SESSION 1: Tuesday 12th (Room 3-2) 11:00 – 12:30.** Chair: Peled, A.

"TOPOGRAPHIC FACTORS AS A USABLE TOOL FOR RIGHT MODELLING OF CONTINUOUS FEATURES MEASURED IN POINT" Bac-Bronowicz, J. (Poland)

"INCREMENTAL UPDATE OF CARTOGRAPHIC DATA IN A VERSIONED ENVIRONMENT" Briat, M-O. (USA), Monnot, J-L. and Kressmann, T.

"RE-GENERALISATION AND CONSTRUCTION – TWO ALTERNATIVE APPROACHES FOR AUTOMATED INCREMENTAL UPDATING IN MRDB" Bobzien, M. (Switzerland), Burghardt, D. and Petzold, I.

"UPDATING OF GEOSPATIAL DATA: A THEORETICAL FRAMEWORK" Ramirez, J.R. (USA)

"CREATION OF THE SYSTEM OF DISTRIBUTED SHAREABLE GEOGRAPHICAL DATA BASES FOR CARRYING OUT COMPLEX RESEARCHES OF TERRITORIES" Lourie, I.K. (Russia), Alioutdinov, A.R. and Michailov, D.V.

## THEME 9:

### CARTOGRAPHIC GENERALIZATION AND MULTIPLE REPRESENTATION.

**SESSION 1: Monday 11th (Room 5-2)**

**09:00 – 10:30.** Session matter: "GENERALISATION, DATA MODELLING AND UPDATING" Chair: Mackaness, W.

"USING ARTIFICIAL NEURAL NETWORKS AND MOMENT INVARIANTS FOR THE EVALUATION AND CLASSIFICATION OF GENERALIZED OBJECTS" Iwaniak, A. (Poland)

"PROPAGATING UPDATES BETWEEN LINKED DATASETS OF DIFFERENT SCALES" Hauernt, J-H. (Germany) and Sester, M.

"A STUDY ON INCREMENTAL OBJECT-ORIENTED MODEL AND ITS SUPPORTING ENVIRONMENT FOR CARTOGRAPHIC GENERALIZATION IN MULTI-SCALE SPATIAL DATABASE" Wu, F. (China), Dang, L., Lu, X. and Su, W.

"METHODOLOGY FOR DEVELOPING A DATABASE OF GEOMETRIC PATTERNS TO BETTER SUPPORT ON-THE-FLY MAP GENERALIZATION" Sabo, M. N. (Canada), Bédard, Y., Bernier, E. and Cardenas, A.

**SESSION 2: Monday 11th (Room 5-2)**

**16:00 – 17:30.** Session matter: "STRUCTURAL ANALYSIS IN MAP GENERALISATION" Chair: McMaster, R.

"A COMBINED AUTOMATED GENERALIZATION MODEL BASED ON THE RELATIVE FORCES BETWEEN SPATIAL OBJECTS" Joubbran Abu Daoud, J. (Israel) and Doytsher, Y.

"THE AUTOMATIC GENERALIZATION OF POINT CLUSTER BASED ON THE SPATIAL KNOWLEDGE ACQUEST" Liu, Y. (China) and Zhai, J.

"USAGE OF PRINCIPAL COMPONENT ANALYSIS IN THE PROCESS OF AUTOMATED GENERALISATION" Burghardt, D. (Switzerland) and Steiniger, S.

"SPATIAL STRUCTURES TO SUPPORT AUTOMATIC GENERALISATION" Regnaud, N. (United Kingdom)

**SESSION 3: Tuesday 12th (Room 2-1)**

**14:00 – 15:30.** Session matter: "ANALYSIS TECHNIQUES IN MAP GENERALISATION" Chair: Weibel, R.

"AN APPROACH TO INTELLIGENT SELECTION OF SETTLEMENTS BASED ON ROUGH SET AND CLUSTERING" Song, Y. (China)

"PROPAGATION OF THE DISPLACEMENTS AND DEFORMATIONS DURING A GENERALISATION PROCESS" Duchêne, C. (France) and Legrand, C.

"THE USE OF EPSILON-CONVEX AREA FOR ATTRIBUTING 'BENDS' ALONG A CARTOGRAPHIC LINE" Mitropoulos, V. (Greece), Androniki, X. and Byron, N.

"THE APPLICATION OF MATHEMATICAL MORPHOLOGY AND PATTERN RECOGNITION TO BUILDING POLYGON" Huilian, W. (China), Fang, W., Hongyan, D., Haizhong, Q., Qi, H. and Linlin, Z.

**SESSION 4: Tuesday 12th (Room 2-1)**

**16:00 – 17:30.** Session matter: "GENERALISATION OF NETWORKS" Chair: Köbben, B.

"ROAD LINE CLASSIFICATION FOR CARTOGRAPHIC GENERALIZATION: A NEURAL NET APPROACH" García Balboa, J.L. (Spain) and Ariza López, F.J.

"RURAL AND URBAN ROAD NETWORK GENERALIZATION DERIVING 1:250,000 FROM 1:1250" Chaudhry, O. (United Kingdom) and Mackaness, W. A.

"GRAPH BASED APPROACH FOR RECOGNITION OF PATTERNS AND IMPLICIT INFORMATION IN ROAD NETWORKS" Heinzle, F. (Germany), Sester, M. and Anders, K.

"MAP GENERALIZATION OF ROAD NETWORKS: CASE STUDY FROM NORWEGIAN SMALL SCALE MAPS" Bjørke, J.T. (Norway) and Isaksen, E.



# Technical Sessions

## Oral Presentations

"GENERALISING OS MASTERMAP® TOPOGRAPHIC BUILDINGS AND ITN ROAD CENTRELINES TO 1:50 000 SCALE, USING A SPATIAL HIERARCHY OF AGNETS, TRIANGULATION AND TOPOLOGY" Revell, P. (United Kingdom), Regnauld, N. and Thom, S.

**SESSION 5: Wednesday 13th (Room 2-1)**  
**14:00 – 15:30.** Session matter: "THEMATIC CONSIDERATIONS IN MAP GENERALISATION"  
Chair: Ruas, A.

"A METHODOLOGY FOR AUTOMATED GENERALIZATION OF GEOLOGICAL AND SOIL MAPS" Steiniger, S. (Switzerland) and Weibel, R.

"MODELLING RELATIONS FOR CATEGORICAL MAPS" Neun, M. (Switzerland) and Steiniger, S.

"A SYSTEM FOR AUTOMATED GENERALISATION OF TOPOGRAPHIC MAPS" Yan, H. (China) and Li, Z.

"ANALYTIC GENERALIZATION OF TOPOGRAPHIC DATA" Itzhak, E. (Israel), Yoeli, P. and Doytsher, Y.

**SESSION 6: Wednesday 13th (Room 2-1)**  
**16:00 – 17:30.** Session matter: "MULTI DIMENSIONAL MAP GENERALISATION TECHNIQUES"  
Chair: Vangenot, C.

"3D BUILDING GENERALIZATION" Kada, M. (Germany)

"UTILISATION OF ARTIFICIAL INTELLIGENCE METHODS AND NEUROFUZZY ALGORITHMS IN THE PROCESS OF DIGITAL ELEVATION MODEL GENERALISATION" Olszewski, R. (Poland)

"CARTOGRAPHIC GENERALIZATION USING PRIMITIVES AND CONSTRAINTS" Brenner, C. (Germany) and Sester, M.

"GENERALIZATION OF URBAN CITY-BLOCK (BUILT-UP AREAS) MAPS IN RASTER MODEL" Ureña Cámara, M.A. (Spain) and Ariza López, F.J.

**SESSION 7: Thursday 14th (Room 2-1)**  
**14:00 – 15:30.** Session matter: "GOVERNMENT AGENCIES AND MAP GENERALISATION"  
Chair: Sester, M.

"AUTOMATING GENERALIZATION – TOOLS AND MODELS" Lee, D. (USA) and Hardy, P.

"THE U.S. CENSUS BUREAU'S GENERALIZATION CONCEPTS IN A MODERNIZED DATA STRUCTURE ENVIRONMENT" Fowler, D. (USA)

"GENERALISATION WITHIN NMO's IN THE 21st CENTURY" Stoter, J. (The Netherlands)

"THE CREATION OF A NATIONAL MULTISCALE DATABASE FOR THE UNITED STATES CENSUS." McMaster, R.B. (USA), Galanda, M., Schroeder, J. and Koehnen, R.

### THEME 10:

## CARTOGRAPHY AND SATELLITE IMAGERY FOR THE MANAGEMENT OF NATURAL RESOURCES AND THE ENVIRONMENT.

**SESSION 1: Wednesday 13th (Room 6-2)**  
**09:00 – 10:30.** Chair: Fraser, D.

"MULTI-TEMPORAL SPATIAL MODELLING OF NOXIOUS WEEDS DISTRIBUTION USING HISTORICAL REMOTE SENSING IMAGERY" Metternicht, G. (Australia) and Robinson, T.

"THE APPLICATION OF REMOTE SENSING TO INFORMATIVE STUDIES ON LINEAR WORKS" Rodríguez, F. (Spain), González, A. and Mariñas, D.

"FEASIBILITY OF THE INTERNATIONAL RADIOASTRONOMY CENTRE OF VENTSPILS UNIVERSITY COLLEGE FOR SUPPLYING SATELLITE IMAGES IN LATVIA" Bargamp, I. (Latvia) and Veckalns, V.

"DEVELOPING A METHODOLOGY FOR MONITORING ANTHROPOGENIC PRESSURES ON NATURE CONSERVATION SITES" Hazeu, G. (The Netherlands) and Mucher, S.

**SESSION 2: Wednesday 13th (Room 6-2)**  
**11:00 – 12:30.** Chair: Metternicht, G.

"HYPERSPECTRAL DATA CLASSIFICATION BY OBJECT-ORIENTED APPROACH FOR THE MANAGEMENT OF URBAN LANDSCAPE" Galli, A. (Italy) and Malinverni, E.S.

"RURAL BUILDINGS STUDY AND CHARACTERIZATION THROUGH QUICKBIRD SATELLITE IMAGES ANALYSIS" Armesto González, J. (Spain), Gil Docampo, M.L. and Cañas Guerrero, I.

"SERVIOLA. A SPANISH EARTH OBSERVATION SYSTEM." Rodríguez Gómez, D. (Spain)

**SESSION 3: Thursday 14th (Room 7-2)**  
**09:00 – 10:30.** Chair: De Maeyer, P.

"USING MACHINE LEARNING ALGORITHMS FOR LAND COVER CLASSIFICATION OF IKONOS IMAGERY" Albanese, F. (Italy), Caprioli, M. and Tarantino, E.

"APPLICATION OF A HYBRID CLASSIFIER TO DISCRIMINATE MEDITERRANEAN CROPS AND FORESTS. DIFFERENT PROBLEMS AND SOLUTIONS." Serra, P. (Spain), Moré, G. and Pons, X

"CONTRIBUTION OF CLASSICAL AND ROBUST PRINCIPAL COMPONENT ANALYSIS TO DEPTH ESTIMATION IN COASTAL ENVIRONMENTS." Castillo López, E. (Spain), Bayarri, V., Castillo, E., Ferrer, R., Pereda, R., Sánchez, J., deLuis Ruiz, J.M. and Ruiz, M.

**SESSION 4: Thursday 14th (Room 7-2)**  
**11:00 – 12:30.** Chair: Ahonen, P.

"ASSESSING THE SUCCESS OF WATERSHED REHABILITATION PRACTICES IN THE RIO LAJA BASIN, MEXICO" Tofflemire, A. (Canada) and Mersey, J.E.

"DEVELOPMENT OF A 3D GEOREFERENCED GROUNDWATER MODEL FOR SALINITY MANAGEMENT" Fraser, D. (Australia) and Lee, D. (H. J.)

"M3FLOOD: AN INTEGRATED SYSTEM FOR FORECASTING, ALERTING AND MANAGING HYDRAULIC EMERGENCY" Erena Arrabal, M. (Spain), Toledano, F., Tireli, L., Montesinos, S., Garcia, P., Mazzeo, S., Fernández, L. and Peter Cox, J.

"LAND USE AND COVER CARTOGRAPHY IN GALICIA" Marcial Díaz Manso, J. (Spain), Barcia Noia, B.; Martín Rosón, A. and Aller González, D.

**SESSION 5: Thursday 14th (Room 7-2)**  
**14:00 – 15:30.** Chair: Corbera, J.

"RAPID CARTOGRAPHY FOR HUMANITARIAN AID" González, L.M. (Spain)

"INTEGRATION OF ENVIRONMENTAL INFORMATION INTO A SATELLITE ORTHO-IMAGING SYSTEM" López-Pantoja Lamarca, A. (Spain), Vega Montilla, J. and Leal Eizaguirre, S.



**International  
Cartographic  
Conference**  
July 9-16 A Coruña 2005 Spain

"USING GIS TECHNIQUES TO MAP ENVIRONMENTAL ZONES IN MOUNTAIN FRAGILE AREAS LOCATED AT THE CUESTAS LANDFORMS OF BRAZIL: A CASE STUDY AT SAO PEDRO COUNTY, SAO PAULO STATE." Rios, L. (Brazil) and Marujo Ferreira, M.F.

"ETHNOCARTOGRAPHY APPLIED TO ENVIRONMENTAL ISSUES" Araujo de Almeida (Vasconcellos), R. (Brazil), Gavazzi, R. and Andrade Carvalho, A.L.

**SESSION 6: Friday 15th (Room 2-1) 09:00 – 10:30.** Chair: Nyapola, H.

"REMOTE SENSING IN AFRICA: MAPPING APPROACH AND PERSPECTIVES" Tchindjang, M. (Cameroon), Nghonda, J.P., Makak, J.S., Menga, V.F., Nziengui, M. and Edou, M

"CARTOGRAPHY AND MONITORING OF THE WORLD HERITAGE SITES OF THE DEMOCRATIC REPUBLIC OF CONGO USING SATELLITE IMAGERY" De Maeyer, P. (Belgium), De Temmerman, L., Defourny, P., Dewasseige, C., Van Coillie, S. and Vansteenvoort, L.

"INTEGRATION OF RMM (RAIN MONITORING BY METEOSAT) AND SVNC VEGETATION MONITORING BY NOAA/NDVI TROLS IN EVALUATING AGRO-PASTORAL SEASONS AND ZONES AT RISK IN THE SAHELIAN ECOLOGICAL ZONE OF NORTHNIGERIA" Olatunji Qudus, T. (United Kingdom)

"MAPPING OF PROTECTED AREAS EVOLUTION IN CAMEROON FROM THE BEGINNING TO 2000: LESSON TO LEARN AND PERSPECTIVES. Tchindjang, M. (Cameroon), Nankam, A., Banga, C.R. and Makak, J.S.

**SESSION 7: Friday 15th (Room 2-1) 11:00 – 12:30.** Chair: Araujo de Almeida (Vasconcellos), R.

"INTEGRATING ECOLOGICAL TOOLS WITH GIS: MODELLING ANIMAL DISPERSAL" Chekuimo, G.H. (Cameroon)

"DEVELOPMENT OF DIGITAL CARTOGRAPHIC DATABASE FOR MANAGING OF THE ENVIRONMENT AND NATURAL RESOURCES IN THE REPUBLIC OF SERBIA" Protic, D. (Serbia) and Nestorov, I.

"CONTRIBUTION OF REMOTE SENSING TO THE STUDY OF THE FRACTURING MOUNTS OF THE TRARAS, ORANIE NORTH-WESTERN." Zine éddine Saad, A. (Algiers) and Zerga, M.

**THEME 11:  
MAPS AND THE INTERNET.**

**SESSION 1: Wednesday 13th (Room 3-2)**

**14:00 – 15:30.** Session matter: "MAPS AND THE INTERNET: WEB MAPPING SERVICES & SVG" Chair: Neumann, A.

"WEB MAPPING SERVICES: A TOOL FOR THEMATIC MAPS" Cammack, R.G. (USA)

"ADDING FUNCTIONALITIES TO WMS-WCS CLIENTS: DOWNLOAD AND ANIMATION" Maso, J. (Spain) and Pons, X.

"A GEOGRAPHICAL INFORMATION SYSTEM FOR SPATIAL DATA ANALYSIS BASED ON THE SCALABLE VECTOR GRAPHICS STANDART" Pinheiro de Sales Cabral, I. (Brazil), Fernández, J.H. and Garcia Gonçalves, L.M.

"SVG IN ENVIRONMENTAL APPLICATIONS" Pinheiro de Sales Cabral, I. (Brazil), Garcia Gonçalves, L.M., Pegado de Medeiros, J. and Farias do Amaral, R.

**SESSION 2: Wednesday 13th (Room 3-2)**

**16:00 – 17:30.** Session matter: "MAPS AND THE INTERNET: APPLICATIONS" Chair: Caquard, S.

"MAPPING WATER RESOURCE DATA" Feuerherdt, C. (Australia)

"WEB MAP SERVER AS DSS TOOL FOR TERRITORIAL PLANNING OF THE AIRPORTS SURROUNDING AREAS" Ruiz, M. (Spain), Seguí Pons, J.M., Ramon Molinas, J., Marti Penas, J.E. and Martínez Reynés, M.R.

"THE USE OF THE INTERNET TO PUBLISH GEOINFORMATION FROM COFFEE ENVIRONMENTS OF BRAZIL" Oliveira de Souza, V.C. (Brazil), Grossi Chquiloff Vieira, T., Ramos Alves, H.M. and Rodrigues Oliveira, M.L.

"WEB-BASED KNOWLEDGE INFORMATION SYSTEM FOR ABORIGINAL LAND MANAGEMENT" Mao, L. (Canada), Rakia, M. and Mioc, D.

**SESSION 3: Thursday 14th (Room 3-2)**

**09:00 – 10:30.** Session matter: "MAPS AND THE INTERNET: USER ISSUES" Chair: Taylor, F.

"MAPS AND GEOINFORMATION ON THE INTERNET OR HOW DO PEOPLE FEEL ABOUT E-DEMOCRACY?" Brande-Lavridsen, H. (Denmark)

"A CARTOGRAPHIC VISUALISATION INTERFACE FOR SPATIAL INFORMATION RETRIEVAL" Purves, R. (Switzerland), Khirni Syed, A., Yang, B. and Weibel, R.

"REGIONAL INTERNET SERVICE FOR SPATIAL INFORMATION" Gajos, M. (Poland) and Maczewski, K.

"GEOGRAPHIC IR SYSTEMS: USER REQUIREMENTS AND EVALUATION" Bucher, B. (France), Clough, P. and Purves, R.

"DEVELOPING CARTOGRAPHIC SKILLS THROUGH PROGRAMMING ON GeoVRML" Gómez Lahoz, J. (Spain), Sánchez Martín, N., Arias Pérez, B. and González Aguilera, D.

**SESSION 4: Thursday 14th (Room 3-2)**

**11:00 – 12:30.** Session matter: "MAPS AND THE INTERNET: INTEGRATED SYSTEMS" Chair: Gartner, G.

"A SYSTEM FOR INTERNET-ENABLED GEOSPATIAL DATA ACCESS" Nierman, A. (USA)

"REACHING THE CITIZEN THROUGH INTERNET CARTOGRAPHY: THE CASE OF LA CORUÑA" Royo Llobet, J. (Spain) and Peña Penabad, J.M.

"LIMITATIONS AND POTENTIALS OF REAL-TIME TRAFFIC VISUALIZATION" Goldsberry, K. (USA)

"REAL TIME PRECISE POSITIONING APPLIED TO CARTOGRAPHY FOR PDA." Quintanilla, I. (Spain), Talaya, J., Valero, B., Grau, J. and Gómez, D.

**SESSION 5: Thursday 14th (Room 3-2)**

**14:00 – 15:30.** Session matter: "MAPS AND THE INTERNET: THEORY" Chair: Peterson, M.

"MAPS FOR PUBLIC INFORMATION: DOES INTERNET MAPPING MEET USER NEEDS AND ACHIEVE GOOD CARTOGRAPHIC STANDARDS?" Forrest, D. (United Kingdom)

"GEO-COMMUNICATION AND WEB-BASED INFRASTRUCTURE. GEO-COMMUNICATION UNDER THE INFLUENCE OF AN INFRASTRUCTURAL ENVIRONMENT." Brodersen, L. (Denmark)

# Technical Sessions

## Oral Presentations

"CARTOGRAPHIC INFORMATION ARCHITECTURE – DESIGNING ONLINE PRESENTATION OF CARTOGRAPHIC INFORMATION TO FACILITATE USER UNDERSTANDING" Pucher, A. (Austria)

"WEB CARTOGRAPHY WEB-ENABLED GEOGRAPHIC INFORMATION SYSTEMS (GIS) – NEW POSSIBILITIES, NEW CHALLENGES" Black, M. (Australia) and Cartwright, W.

"THE ROLE OF CARTOGRAPHY WITHIN DISTRIBUTED SOFTWARE SYSTEMS: WHAT CAN WE CONTRIBUTE? HOW CAN WE PROSPER?" Cooper, M. (Switzerland), Sykora, P. and Hurni, L.

**SESSION 6: Thursday 14th (Room 3-2) 16:00 – 17:30.** Session matter: "INTERNET MAPS AND GIS" Chair: Oliveiro de Souza, V.C.

"REALIZATION OF THE «DIGITAL JAPAN» CONCEPT AND CHALLENGE FOR NEW BUSINESS MODELS" Kubo, N. (Japan), Ohno, H., Takakuwa, N., Fujimurah., and Ishizeki, T.

"WEB COVERAGE AND GEOREFERENCED IMAGE SERVICE FOR THE SPATIAL DATA INFRASTRUCTURE OF THE REPUBLIC OF CUBA" Capote Fernández, J.L. (Cuba), Cruz Iglesias, R., González Suárez, G., Osmani, Herrera González and Becerra Lugones, L.

"SIGTPI: A GIS BASED ON WEB TO THE MANAGEMENT OF PUBLIC TELEPHONY" Cruz Iglesias, R. (Cuba), Capote Fernández, J.L., González Suárez, G., Osmani, Herrera González and Becerra Lugones, L.

"WebEIEL: A WEB-BASED GIS FOR THE E.I.E.L." Luaces, M.R. (Spain), Brisaboa, N.R., Paramá, J.R. and Viqueira, J.R.

**SESSION 7: Friday 15th (Room 3-2) 14:00 – 15:30.** Session matter: "MAPS AND THE INTERNET: CYBERCARTOGRAPHY – THE NEXT STEP" Chair: Cartwright, W.

"A DECADE OF MAPS AND THE INTERNET" Peterson, M.P. (USA)

"CYBERCARTOGRAPHY: THEORY AND PRACTICE" Taylor, D. R. F. (Canada), Eddy, B., Pulsifer, P. and Lauriault, T.

"EXPLORING SOUND DESIGN IN CYBERCARTOGRAPHY" Caquard, S. (Canada), Brauen, G. and Wright, B.

"CYBERCARTOGRAPHY AND HUMAN-COMPUTER INTERACTION: NEW WINE IN OLD BOTTLES?" Parush, A. (Canada) and Tsuji, B.

### THEME 12: INTERNET LOCATION-BASED SERVICES, MOBILE MAPPING AND NAVIGATION SYSTEMS.

**SESSION 1: Thursday 14th (Room 4-2) 14:00 – 15:30.** Chair: Carter, J.R.

"MOBILE GEOSPATIAL DATA COLLECTION – CONCEPTS AND FIRST EXPERIENCES" Reinhardt, W. (Germany), Kandawasvika, A., Mäs, S. and Wa, F.

"GEOMOSE – CARTOGRAPHIC REQUIREMENTS FOR LBS ON RIVER CRUISING" Asamer, H. (Austria) and Riedl, A.

**SESSION 2: Thursday 14th (Room 4-2) 16:00 – 17:30.** Chair: Arikawa, M.

"THE PRESENT SITUATION OF VEHICLE NAVIGATION TECHNIQUES IN CHINA AND THE MULTI-TOPOLOGICAL FORMATION AND ROUTE COMPUTING OF NATIONAL NAVIGATION MAP" Dong, Z. (China), Ailong, L. and De, Z.

"INTEGRATION OF GPS, PDA AND DIGITAL CAMERA TO LOOK FOR GEODETICS REFERENCE POINTS" Quintanilla, I. (Spain), Valero, B., Gallego, A. and Sierra, A.

"PARSING WALKING DIRECTIONS USING SIDEWALK NETWORKS" Noaki, K. (Japan) and Arikawa, M.

**SESSION 3: Friday 15th (Room 4-2) 09:00 – 10:30.** Chair: Wolodtschenko, A.

"FROM MAP USE RESEARCH TO USABILITY RESEARCH IN GEO-INFORMATION PROCESSING" Van Elzakker, C.P.J.M. (The Netherlands)

"THE IMPORTANCE OF BEING RELEVANT" Reichenbacher, T. (Germany)

"THE MANY DIMENSIONS OF MAP USE" Carter, J.R. (USA)

"A WORKING CONCEPTUAL FRAMEWORK OF UBIQUITOUS MAPPING" Morita, T. (Japan)

**SESSION 4: Friday 15th (Room 4-2) 11:00 – 12:30.** Chair: Morita, T.

"ASSESSING TWO APPROACHES TO A WAY FINDING TASK USING A MOBILE DEVICE" Armich, D. (USA), Vila-Ruiz, J. and Carter, J.R.

"EXTENT AND EFFECTIVENESS OF MAP ABSTRACTION FOR COMMUNICATING ROUTES IN A LBS" Gartner, G. (Austria) and Radoczky, V.

"GRAPH BASED METHODS FOR LOCALISATION BY A SKETCH" Kocczynski, M. (Germany)

**SESSION 5: Friday 15th (Room 4-2) 14:00 – 15:30.** Chair: Jobst, M.

"A CASE STUDY OF COMBINED TEXT AND ICON PLACEMENT" Harrie, L. (Sweden), Ringberg, P. and Zhang, Q.

"ADAPTING MAP ICONS FOR MOBILE USERS" Nivala, A. (Finland) and Sarjakoski, L.T.

"A WEB BASED AND TIME DEPENDENT VISUALISATION OF AN EVENT CALENDAR" Hampe, M. (Germany), Hose, K., Hatger, C. and Katterfeld, C.

"NECESSARY CONDITIONS FOR CARTOGRAPHIC COMMUNICATION AND NAVIGATION WITH GUIDE MAPS" Wakabayashi, Y. (Japan)

**SESSION 6: Friday 15th (Room 4-2) 16:00 – 17:30.** Chair: Peterson, M.

"A USER ASSESSMENT FOR DEVELOPING OPTIMAL CARTOGRAPHIC REPRESENTATION MODELS WITHIN AN AUSTRALIAN MOBILE LOCATION-BASED SERVICES TRAVEL APPLICATION." Wealands (nee Urquhart), K. (Australia), Cartwright, W. and Miller, S.

"A TOOL FOR THE DESIGN OF ADAPTATION MECHANISMS FOR MOBILE CARTOGRAPHIC SYSTEMS" Tsoulos, L. (Greece) and Goulimis, E.

"THE CITYINFO PEDESTRIAN INFORMATION SYSTEM – AN EXPERIMENT WITH CONTENT CREATION AND PRESENTATION TECHNIQUES" Paelke, V. (Germany), Elias, B. and Hampe, M.

"TWO METHODS FOR VISUALIZING AND REFRESHING IN MOBILE MAPS FOR PEDESTRIANS" Yan, C. (China), Chen, J., Zhao, X., Jiang, J., Zhao, R.



### **THEME 13:**

## **MARINE CARTOGRAPHY, NAVIGATION AND OCEAN MAPPING.**

### **SESSION 1: Monday 11th (Room 3-2)**

**14:00 – 15:30.** Chair: Barbor, K.

“NEW EXPERIENCES IN NAUTICAL CHART PRODUCTION IN THE INSTITUTO HIDROGRÁFICO DE LA MARINA” Chans, A. (Spain) and Millan, J.

“NAUTICAL CHARTING IN SMALLER COUNTRIES WITH SHORT COASTLINE – TROUBLES AND ADVANTAGES” Karnicnik, I. B.Sc.Geod. (Slovenia) and Radovan, D. Sc.Cart

«UNLOCKING THE MARINE DATA TREASURE CHEST» Pepper, J. (United Kingdom)

“THE USE OF RADAR SAR DATA FOR OIL SPILL DETECTION AND MAPPING” Bouchaib, S. (Italy), Smara, Y., Salvatori, L., Del Frate, F. & Lichtenegger, J.

### **SESSION 2: Monday 11th (Room 3-2)**

**16:00 – 17:30.** Chair: Furness, R.

“ENC AND SDI: CONVERGENCE ISSUES” Delgado Fernández, T. (Cuba) and Huet, M.

“ELECTRONIC NAVIGATIONAL CHARTS – PROGRESS AND OBSTACLES TO WORLDWIDE COVERAGE” Barbor, K. (IHB Monaco)

“THE NEXT EDITION OF IHO TRANSFER STANDARD S-57 (EDITION 4.0)” Alexander, L. (USA) and Huet, M.

“MULTISCALE ENC DATA MANAGEMENT ON EASTERN COAST OF THE ADRIATIC SEA AS AN ARCHIPELAGIC SEA AREA” Duplanèia Leder, T. (Croatia) and Lapaine, M.

### **SESSION 3: Tuesday 12th (Room 3-2)**

**09:00 – 10:30.** Chair: Pepper, J.

“SOME SEMIOTICAL ASPECTS OF SYMBOLS CONSTRUCTION IN NAUTICAL NAVIGATIONAL CHARTS (AT THE EXAMPLE OF UKRAINIAN LARGE-SCALE NNC)” Gordyeyev, A. (Russia) and Martschenko, O.

“INDIAN ELECTRONIC NAVIGATIONAL CHARTS (ENC) PROGRAMME: MARCHING TOWARDS SELF RELIANCE” Singh, U. K. (India) and Kumar, R

“MULTILINGUAL LEXICON OF UNDERSEA FEATURE TYPES” Márton, M. (Hungary) and Dutkó, A.

“THE POLITICAL PROBLEM OF BI- AND MULTILINGUAL MARITIME AND LACUSTRINE NAMES IN MAPS” Kadmon, N. (Israel)

### **THEME 14:**

## **NATIONAL AND REGIONAL ATLASES. ELECTRONIC ATLASES. THEMATIC AND MULTIMEDIA CARTOGRAPHY.**

### **SESSION 1: Wednesday 13th (Room 7-2)**

**09:00 – 10:30.** Session matter: “HEALTH AND SOCIAL DATA” Chair: Aranaz, F.

“THE DESIGN OF AN INTERACTIVE ATLAS FOR SOCIAL ASSISTANCE IN THE STATE OF PARANA - BRAZIL” Delazari, L. (Brazil) and Pimentel Cintra, J.

“VISUALIZING AND ANALYZING PUBLIC HEALTH DATA USING VALUE-BY-AREA:” Holt, J.B. (USA) and Sui, D.Z.

“ATLAS OF NATURAL AND TECHNOLOGICAL HAZARDS AND RISKS OF EMERGENCIES IN THE TERRITORY OF THE RUSSIAN FEDERATION” Komedchikov, N.N. (Russia)

### **SESSION 2: Wednesday 14th (Room 7-2)**

**11:00 – 12:30.** Session matter: “LAND AND ENVIRONMENT” Chair: Kramers, E.

“HYDROGEOLOGICAL ATLASES OF THE GEOLOGICAL AND MINING INSTITUTE OF SPAIN” Vega, L. (Spain) and del Pozo, M.

“MULTIMEDIA ATLAS OF ECOLOGICAL ENVIRONMENT IN FUJIAN: DESIGN AND IMPLEMENTATION” Shulei, Z. (China) and Yufen, C.

“ATLAS OF THE LANDS OF RUSSIA: CONCEPT, METHODS OF REALISATION, CONTENT” Melnikov, A.V. (Russia), Samratov, U.D., Poroshina, L.N., Berlyant, A.M. and Loiko, P.F.

“LANDSCAPE, CLIMATE, NATURAL EXTREMES – THREE THEMES FOR ATLAS PROJECTS BUT THOUSANDS OF SIMILARITIES AND DIFFERENCES” Vozenilek, V. (Czech Republic)

### **SESSION 3: Wednesday 13th (Room 7-2)**

**14:00 – 15:30.** Session matter: “CENSUS AND DEMOGRAPHY” Chair: Fowler, D.

“THE NATIONAL HISTORIC GEOGRAPHIC INFORMATION SYSTEM” McMaster, R.B. (USA), Lindberg, M. and Adams, J.S.

“RURAL TOURISM ATLAS OF CASTILLA LA MANCHA” Sancho Comins, J. (Spain) and Panadero Moya, M.

“OVERVIEW OF THE CENSUS ATLAS OF THE UNITED STATES” Suchan, T.A. (USA), Brewer, C.A. and Tait, A.

“DEMOGRAPHIC ATLAS OF ALBANIA: PILOT PROJECT FOR A NATIONAL ATLAS INFORMATION SYSTEM IN A SOUTH EAST EUROPEAN TRANSFORMATION COUNTRY” Asche, H. (Germany), Doka, D., Berxholi, A. and Siemer, J.

### **SESSION 4: Wednesday 13th (Room 7-2)**

**16:00 – 17:30.** Session matter: “NATIONAL ATLAS (1)” Chair: Trainor, T.

“ATLAS INFORMATION SYSTEM AUSTRIA – AN ONLINE ATLAS CONCEPT UTILISING A CARTOGRAPHIC “RESTRICTIVE FLEXIBLE” APPROACH” Gartner, G. (Austria), Kriz, K. and Spanring, C.

“PRACTICE FOR ELECTRONIC ATLAS PROJECTS IN CHINA” Fu, R. (China) and Qingyun, D.

“THE ATLAS OF CANADA AFTER 100 YEARS – USER-CENTRED DEVELOPMENT AND EVOLUTION” Kramers, R.E. (Canada)

“THE THIRD NATIONAL ATLAS OF BELGIUM” De Maeyer, P. (Belgium), Donnay, J., Lambrecht, M., Thomas, I., Van der Haegen, H., Van Doninck, B., Van Hecke, E. and Vrielinck, S.

### **SESSION 5: Thursday 14th (Room 6-2)**

**09:00 – 10:30.** Session matter: “NATIONAL ATLAS (2)” Chair: Jordan, P.

“ANExxi: THE XXI CENTURY NATIONAL ATLAS OF SPAIN” Romera, C. (Spain) and Del Campo, A.

“TECHNICAL ASPECTS OF THE OBJECT GENERATION PROCESS IN THE SISTEMA DE INFORMACIÓN DEL ATLAS NACIONAL DE ESPAÑA (SIANE)” Alonso, J.J. (Spain) and Del Campo García, A.

# Technical Sessions

## Oral Presentations

"GERMANY IN MAPS – A MULTIPURPOSE TOOL BOX" Hanewinkel, C. (Germany) and Tzschaschel, S.

"DESIGNING A NEW CULTURAL ELECTRONIC ATLAS OF GREECE." Myrdis, M. (Greece), Lafazani, P., Karanikolas, N. and Ramnalis, D.

"ATLAS BOOKS + GIS = GKS, 'GEOGRAPHICAL KNOWLEDGE SYSTEM' – NEW INTERACTIVE WEB SERVICE LAUNCHED BY THE NATIONAL ATLAS OF SWEDEN" Cramér, M. (Sweden) and Arnberg, U.

### **SESSION 6: Thursday 14th (Room 6-2)**

**11:00 – 12:30.** Session matter: "METHODOLOGICAL APPROACHES" Chair: Tzschaschel, S.

"LANGUAGE AND PLACE NAMES IN NATIONAL AND REGIONAL ATLASES. METHODOLOGICAL CONSIDERATIONS AND PRACTICAL USE EXEMPLIFIED BY NEW ATLASES FROM THE EASTERN PART OF EUROPE" Jordan, P. (Austria)

"SMART LEGEND – SMART ATLAS!" Sieber, R. (Switzerland), Schmid, C., and Wipf, A.

"THE CONCEPT "DURABILITY" ON THE NATIONAL ATLASES" Aranaz del Río, F. (Spain)

"METHODOLOGY FOR THE ESTABLISHMENT OF INDICATORS OF QUALITY IN THE ATLASES" De Luis Ruiz, J.M. (Spain), Ferrer Torio, R., Pereda García, R. and Ruiz Bedía, M.L.

### **SESSION 7: Thursday 14th (Room 6-2)**

**14:00 – 15:30.** Session matter: "GIS AND ATLAS DATA" Chair: McMaster, R.

"SIGpaS – AN ELECTRONIC HEALTH ATLAS FOR THE DOMINICAN REPUBLIC" Kunzel, W. (Republica Dominicana)

"DATA WAREHOUSING IN MAPPING AND GIS" Ramirez, J.R. (USA)

"MODEL OF DATA FOR THE ELABORATION OF THEMATIC CARTOGRAPHY: MAP OF FORMS OF THE RELIEF" Mejías Vera, M.A. (Spain) and Vera Galván, J.R.

"THE ATLAS AS A PORTAL FOR DATA DISCOVERY IN THE GDI: PROSPECTS AND DEVELOPMENTS" Aditya, T. (The Netherlands) and Kraak, M.

### **SESSION 8: Thursday 14th (Room 6-2)**

**16:00 – 17.30.** Session matter: "OTHER ATLAS" Chair: Sieber, R.

"THINKING MODULAR – THE «PLUGGABLE ATLAS»" Huber, S. (Switzerland), Jeller, P. and Rueggsegger, M.

"THE ATLAS OF CANADA. 100 YEARS AND MORE" Williams, D. (Canada)

"THE UNIFORM EUROPEAN UNION AS A MOSAIC OF UNEQUAL REGIONS. GEOGRAPHIC APPROACH – CARTOGRAPHIC DOCUMENTATION." Myrdis, M. (Greece), Lafazani, P., Karanikolas, N. and Ramnalis, D.

## **THEME 15: VIRTUAL MODELS, VISUALISATION, ANIMATION AND CARTOGRAPHY.**

### **SESSION 1: Wednesday 13th (Room 6-2)**

**14:00 – 15:30.** Session matter: "VISUALIZATION TO SUPPORT PLANNING & DECISION-MAKING" Chair: Mac Eachren, A.

"COMMUNITY COLLABORATIVE DECISION-MAKING TOOLS: DETERMINING THE EXTENT OF "GEOGRAPHICAL DIRTINESS" FOR EFFECTIVE DISPLAYS" Cartwright, W. (Australia), Pettit, C., Nelson, A. and Berry, M.

"MODELING AND VISUALIZING POPULATION DENSITY FOR THE FIRE AND RESCUE SERVICES IN HELSINKI, FINLAND" Krisp, J. (Finland), Henriksson, R. and Hilbig, A.

"GEOVISUALISATION METHODS FOR PARTICIPATORY SPATIAL PLANNING" Baranowski, M. (Poland) and Andrzejewska, M.

"INTERACTIVE WEB-BASED VISUALIZATION OF GEOSPATIAL INFORMATION FOR SUSTAINABLE DEVELOPMENT DECISION MAKING" Siekierska, E. (Canada) and Williams, P.

### **SESSION 2: Wednesday 13th (Room 6-2)**

**16:00 – 17:30.** Session matter: "VISUALIZATION SYSTEMS AND STANDARDS" Chair: Skupin, A.

"MODELLING VIRTUAL REALITY OF GEOGRAPHICAL SPACE METROPOLITAN REGION OF SANTIAGO OF CHILE." Llanos, P. (Chile)

"MODEL-DRIVEN CONTENT MANAGEMENT FOR WEB-BASED 3D GEOINFORMATION SERVICES" Nebiker, S. (Switzerland), Schuetz, S. and Wuest, T.

"AN APPLICATION FRAMEWORK FOR INTERACTIVE VISUALIZATION OF EARTH PHENOMENA" Camargo, N.F. (Brazil) and de Carvalho, C. A. P.

"USABILITY TESTS AND RENDERING METHODS IN REAL-TIME 3D GEOVISUALISATION" Nielsen, A. (Denmark)

### **SESSION 3: Thursday 14th (Room 1-1)**

**14:00 – 15:30.** Session matter: "HUMAN-CENTERED GEOVISUALISATION" Chair: Blok, C.

"CAN YOU SEE WHAT I SEE? HELPING INDIVIDUALS BENEFIT FROM THE INSIGHTS OF INTERDISCIPLINARY COLLABORATION" Griffin, A.L. (Australia)

"VISUAL REPRESENTATION OF GEOSPATIAL METADATA IN THE PROCESS OF SELECTING DATASETS" Ahonen-Rainio, P. (Finland)

"GEOVISUALIZATION DESIGN FOR EPIDEMIOLOGY: A FRAMEWORK" Robinson, A.C. (USA)

"EXPLORATION OR COMMUNICATION: DEFINING EFFECTIVE VISUALISATIONS FOR SPATIAL DATA" Chen, X. (Australia) and Bishop, I.D.

"THEMATIC RELEVANCE AND PERCEPTUAL SALIENCE OF DYNAMIC GEOVISUALIZATION DISPLAYS" Fabrikant, S.I. (USA) and Goldsberry, K.

### **SESSION 4: Thursday 14th (Room 1-1)**

**16:00 – 17:30.** Session matter: "VR 2 – SYSTEM AND TECHNOLOGY" Chair: Doellner, J.

"ADVANCE IN MULTI-MEDIA MAPPING" Ramirez, J.R. (USA)

"THE POTENTIAL OF 3D-DISPLAYS FOR THE VISUALISATION OF GEO-VIRTUAL ENVIRONMENTS" Schratz, A. (Austria) and Riedl, A.

"VIRTUAL MODELS COMBINING CARTOGRAPHY AND HIGH-RESOLUTION TEXTURE MAPPED AND RANGE DATA" Ortiz, P. (Spain) and Sánchez, H.



"3D VISUALIZATION THROUGH GEOVRML: A COMPROMISE BETWEEN MEASUREMENT AND REPRESENTATION" González Aguilera, D. (Spain), Gómez Lahoz, J., Arias, Pérez, B. and Sánchez Martín, N.

**SESSION 5: Friday 15th (Room 6-2) 09:00 – 10:30.** Session matter: "NAVIGATING AND EXPLORING 3D SCENES" Chair: Du, Q.

"REAL-TIME VISUALIZATION OF GEOSPATIAL FEATURES THROUGH THE INTEGRATION OF GIS WITH A REALISTIC 3D TERRAIN DYNAMIC VISUALIZATION SYSTEM" Hernández, L. (Spain), Taibo, J., Seoane, A., López, R., Jaspe, A. and Varela, A.

"MOVING BEYOND NOVELTY: CREATING EFFECTIVE 3D FLY-OVER MAPS" Harrower, M. (USA) and Sheesley, B.C.

"INSTITUTIONAL CARTOGRAPHY VISUALIZER OF THE NATIONAL GEOGRAPHICAL INSTITUTE OF SPAIN" Carbajo, M. (Spain) and Del Campo, A.

"INTERACTIVE REAL-TIME VR CARTOGRAPHY" Buchroithner, M. (Germany), Gindele, M., Habermann, K. and Hetze, B.

**SESSION 6: Friday 15th (Room 6-2) 11:00 – 12:30.** Session matter: "SPACE-TIME VISUALIZATION" Chair: Kraak, M.-J.

"DYNAMIC VISUALIZATION VARIABLES IN ANIMATION TO SUPPORT MONITORING OF SPATIAL PHENOMENA" Blok, C.A. (The Netherlands)

"SEMANTIC AND PRAGMATIC ASPECT OF THE TRANSMITTING INFORMATION BY ANIMATED MAPS" Opach, T. (Poland)

"GEO-VISUALIZATION FOR THE ANALYSIS OF SPATIAL TIME SERIES: FILLING GAPS IN THE TASK SPACE COVERAGE" Andrienko, G. (Germany) and Andrienko, N.

"ENTITIES-CARTOGRAPHIC METHOD OF SELECTION OF STATIC AND DYNAMIC VARIABLES FOR TEMPORAL CARTOGRAPHIC ANIMATIONS" Dukaczewski, D. (Poland)

**SESSION 7: Friday 15th (Room 6-2) 14:00 – 15:30.** Session matter: "EXPLORATORY GEOVISUALIZATION" Chair: Andrienko, G.

"VISUALIZING THE ICA: A CONTENT-BASED APPROACH" Skupin, A. (USA) and De Jongh, C.

"APPROACHES OF USER-SPECIFIC EXPLORATIVE GEOVISUALISATION" Swienty, O. (Germany)

"INTERACTIVE CARTOGRAPHIC ANIMATIONS – ANALYSIS FUNCTIONALITY IN A WEB ENVIRONMENT" Midtbø, T. (Norway) and Boros, R.

**SESSION 8: Friday 15th (Room 6-2) 16:00 – 17:30.** Session matter: "VR 1 - APPLICATIONS" Chair: Fabrikant, S.

"TOURING «GREAT ROADS» OF HUMAN ACTIVITY: USING GEOGRAPHIC VISUALIZATION TO EXPLORE HISTORICAL LANDSCAPES" Baber, R.M. (USA) and Brown, J.S.

"ON SOME 4-D VISUALIZATION STRATEGIES IN ELECTRONIC MAP" Du, Q. (China) and Jiang, W.

"EXPLORING FUTURE LANDSCAPES USING VIRTUAL ENVIRONMENTS" Feuerherdt, C. (Australia) and Cartwright, W.

"ALTERNATIVE 3D VISUALISATION METHODS IN VIRTUAL CARTOGRAPHY: THE CASE OF ANCIENT TEMPLE OF POSEIDON, SOUNIO, GREECE" Dinakis, L. (Greece), Panagiotis, tziachris and Karanikolas, N.

**SESSION 9: Friday 15th (Room 1-1) 16:00 – 17:30.** Session matter: "3D – THEORY, METHODS & IMPLEMENTATION" Chair: Cartwright, W.

"EXPRESSIVE VIRTUAL 3D CITY MODELS" Doellner, J. (Germany) and Buchholz, H.

"A VISUALIZATION METHOD BASED ON FOVEATION" Çöltekin (Coltekin), A. (Finland)

"USING COMPUTER GAMING TECHNOLOGY TO EXPLORE HUMAN WAYFINDING FOR NAVIGATING URBAN LANDSCAPES" Germanchis, T. (Australia), Cartwright, W. and Pettit, C.

"YTHANVIEW" VISUALIZING AND ESTUARY AND VIRTUAL FIELDWORK AT THE YTHAN ESTUARY, SCOTLAND, UK" Green, D.R. (United Kingdom) and Bojar, K.

"COMMUNICATING FLOOD RISKS TO THE PUBLIC USING A DIGITAL VISUALIZATION PROCESS" Basic, F. (Australia), Cartwright, W. and Handmer, J.

## THEME 16: HISTORY OF CARTOGRAPHY.

**SESSION 1: Monday 11th (Room 7-2) 14:00 – 15:30.** Chair: Postnikov, A.

"ARTHUR H. ROBINSON AND THE FABRIC OF CARTOGRAPHY" Olson, J. M. (USA)

"TWO HUNDRED YEARS OF CARTOGRAPHY OF CATALONIA MADE IN FRANCE: INTENTIONS AND OUTCOMES (1633-1835)" Montaner, C. (Spain)

"NATIONAL TOPOGRAPHIC MAPPING IN THE DIGITAL TRANSITION" Varanka, D. (USA)

"THE HISTORY OF MAPPING OF KYOTO-BETWEEN PICTURE AND SURVEY" Hasegawa, K. Japan)

**SESSION 2: Monday 11th (Room 7-2) 16:00 – 17:30.** Chair: Olson, J.

"POTENTIAL OF VIRTUAL 3D-FACSIMILES – EXEMPLIFIED BY THE EARTH GLOBE OF GERARD MERCATOR (1541)" Hruby, F. (Austria), Plank, I. and Riedl, A.

"THE LEGACY OF COLONIALISM ON MAPPING IN AFRICA: WITH FOCUS ON NIGERIA." Olomo, O. (United Kingdom)

"NEW DATA ON RUSSIAN USE OF CAPTAIN MALASPINA'S EXPEDITION (1791-1793) MATERIALS FOR IMPROVING OF THE MAPS IN THE ATLAS OF THE SOUTHERN SEA (KRUZENSHTERN, 1823-1826)" Postnikov, A. (Russia)

"MAPPING OF CZECH LANDS DURING THE 18TH CENTURY" Miksovsky, M. (Czech Republic) and Zimová, R.

**SESSION 3: Tuesday 12th (Room 7-2) 11:00 – 12:30.** Chair: Aranaz, F.

"WOMEN IN MARINE CARTOGRAPHY OF RUSSIA" Smirnov, V. G. (Russia)

"THE EARLIEST MAPS OF THE CAMINO DE SANTIAGO" Hernando, A. (Spain)

"THE HISTORICAL EVOLUTION OF THE WAYS IN SPAIN: A CARTOGRAPHIC ANALYSIS BASED IN GIS" Manzano-Agugliaro, F. (Spain) and Manzano-Agugliaro, G.

"GROWTH AND DEVELOPMENT OF INDIAN CARTOGRAPHY IN HISTORICAL PERSPECTIVE" Singh, K.P. (India) and Singh, A.

# Technical Sessions

## Oral Presentations

### **SESSION 4: Tuesday 12th (Room 7-2)**

14:00 – 15:30. Chair: Zinchuck, L.

“THE HISTORY OF CARTOGRAPHY IN BRAZIL: A FIELD OPEN TO RESEARCH” Andrade Gomes, M.d.C. (Brazil)

“A MAP AND ITS COPY OF SIMON VAN DER STEL’S EXPEDITION TO NAMAQUALAND (1685): AN ENQUIRY INTO THEIR VISUAL VALUES” Alma Maré, E. (South Africa) and Dubourg Glatigny, P.

“THE “ALBUM ROYAUME DE NAPLES”: A EXAMPLE OF THE SPANIARD MILITARY CARTOGRAPHY IN THE EARLY 18TH CENTURY” San Antonio, C. d. (Spain)

### **SESSION 5: Tuesday 12th (Room 7-2)**

16:00 – 17:30. Chair: Smirnov, V.G.

“THE CARTOGRAPHY IN THE STATE OF THE RIO GRANDE DO SUL; FIVE HUNDRED YEARS OF HISTORY” Florencio de Souza, S. (Brazil), Barbosa da Silva, J.L., dos Santos da Rocha, R. and da Silva Celestino, V.

“A «CARTOGRAPHICAL» RECONSTRUCTION OF SPAIN IN THE XVI CENTURY FROM THE COSMOGRAPHY OF HERNANDO COLON” Aranaz del Rio, F. (Spain)

“THE ATLAS OF EL ESCORIAL” Crespo Sanz, A. (Spain)

“THE HISTORY OF FORMING AND STUDY OF THE CARTOGRAPHIC COLLECTIONS OF THE RUSSIAN STATE LIBRARY” Zinchuk, L. (Russia) and Kotelnikova, N.

“BRITISH MILITARY SURVEYORS IN PALESTINE AND SYRIA, 1840-1841” Goren, H. (Israel)

### **THEME 17:**

## **WORLD AND AERONAUTICAL CARTOGRAPHY AND MILITARY MAPPING.**

### **SESSION 1: Tuesday 12th (Room 4-2)**

11:00 – 12:30. Chair: Palacio, J.

“PROGRESS TOWARDS THE COMPLETION OF GLOBAL MAP: A NEW INTERNATIONAL MAP OF THE WORLD” Taylor, D.R.F. (Canada)

“CARTOGRAPHIC DEVELOPMENTS FOR MILITARY SITUATION AWARENESS” Ferland, Y. (Canada)

“GEOGRAPHIC SUPPORT DURING OPERATIONS” Cortés, M. C. (Spain)

### **SESSION 2: Thursday 14th (Room 5-2)**

16:00 – 17:30. Chair: Palacio, J.

“CARTOGRAPHIC VISUALIZATION OF MILITARY MAPS AT MID-SCALE” Torun, A. (Turkey) and Ulubay, A.

“THE QUALITY OF NEWSPAPER CARTOGRAPHY IN WARTIME: THE UNITED STATES OF AMERICA AGAINST IRAQ.” De Wolf, N. (Belgium), Van der Gucht, W., Vansteenvoort, L., Brondeel, M. and De Maeyer, P.

### **THEME 18:**

## **MOUNTAIN CARTOGRAPHY.**

### **SESSION 1: Friday 15th (Room 5-2) 14:00 – 15:30.** Chair: Hurni, L.

“TERRAIN ASSESSMENT IN A MOUNTAINOUS ENVIRONMENT – A SWISS AUSTRIAN CONTEMPLATION” Kriz, K. (Austria)

“PERSPECTIVE VIEWS AND PANORAMAS IN PRESENTATION OF RELIEF FORMS IN POLAND” Rudnicki, W. (Poland)

“INVESTIGATING THE EFFECTS OF 2D AND 3D REPRESENTATIONS ON HUMAN WAYFINDING IN MOUNTAINS” Wood, M. (United Kingdom), Pearson, D., Miller, D. and Calder, C.

### **SESSION 2: Friday 15th (Room 5-2) 16:00 – 17:30.** Chair: Kriz, K.

“DEVELOPMENT OF A WEB-MAPPING EXPERT TOOL FOR HAZARD ASSESSMENT IN ALPINE VALLEYS” Trau, J. (Switzerland), Stern, B., Gogu, R. and Hurni, L.

“PHOTOGRAMMETRIC METHODS FOR THE OBTAINING OF DETAILED CARTOGRAPHY IN ACTIVE MOUNTAIN GLACIERS.” De Sanjosé Blasco, J.J. (Spain), Atkinson Gordo, A.D.J., De Pablo, N.A. and Salvador Franch, F.

“GEOWARN - A WEB-BASED ATLAS INFORMATION SYSTEM FOR VOLCANIC MONITORING” Hurni, L. (Switzerland), Gogu, R., Jenny, B., Terribilini, A. and Freimark, H.

### **THEME 19:**

## **TOURIST CARTOGRAPHY**

### **SESSION 1: Tuesday 12th (Room 5-2)**

11:00 – 12:30. Session matter: “HIKING MAPS” Chair: Ingalls, R.

“EVOLUTION OF THE TOURIST CARTOGRAPHY IN PERU” Mori Segura, M.L. (Peru) and Barreda Sandoval, J.

“PLANNING HIKES VIRTUALLY – HOW USEFUL ARE REALISTIC 3D VISUALIZATIONS?” Bleisch, S. (Switzerland)

“INTERACTIVE HIKING MAP OF YOSEMITE NATIONAL PARK” Williams, J. (Switzerland)

“DESIGN OF THE OPTIMUM CONTENT AND THE SYMBOL CODE OF BIKING MAPS” Kudrnovsky (Czech Republic), E., Letal, A. and Sedlak, P.

### **SESSION 2: Tuesday 12th (Room 5-2)**

14:00 – 15:30. Session matter: “NEW DEVELOPMENTS” Chair: Nebiker, S.

“TOURISTIC CARTOGRAPHY OF I.C.V.” Caletrío Arcos, M. (Spain)

“DESIGN AND IMPLEMENTATION OF TOURIST WEBGIS BASED ON J2EE” Wang, J. (China) and Li, C.

“NEW DEVELOPMENT ON TOURIST CARTOGRAPHY” Li, B. (China) and Liu, J.

“TOURISTIC MAPS. THE CHALLENGE OF USING ART IN THE DIGITAL ERA” Fiori, S.R. (Brazil)

### **SESSION 3: Tuesday 12th (Room 5-2)**

16:00 – 17:30. Session matter: “IMAGES FOR TOURIST MAPS” Chair: Arozarena, A.

“REMOTE SENSING DATA APPLIED TO REALISTIC TERRAIN DEPICTION ON TOURIST MAPS.” Drachal, J. (Poland)

“THE ESSENTIAL IMAGE IS THE GUIDE” Ingalls, R.D. (USA)

“THE SCIENTIFIC FUNDAMENTALS OF CREATION THE ROAD MAPS FOR TOURIST’S APPOINTMENT.” Vereshchaka, T.V. (Russia) and Larichkina, N.A.

“GIS OF THE CROATIAN CITIES AT THE ADRIATIC COAST” Franges, S. (Croatia) and Zupan, R.



**International  
Cartographic  
Conference**  
July 9-16 A Coruña 2005 Spain

**THEME 20:**

**CARTOGRAPHY AND  
CHILDREN. EDUCATIONAL  
PRODUCTS.**

**SESSION 1: Tuesday 12th (Room 4-2)**

**14:00 – 15:30.** Session matter: "NEW CHALLENGES FOR CARTOGRAPHY AND CHILDREN" Chair: Owen, D.

"IDENTIFYING SPATIAL COMPETENCE OUTCOMES FOR SOUTH AFRICAN SECONDARY SCHOOLS" Innes, L. (South Africa)

"AGENDA 21, CARTOGRAPHY AND CHILDREN IN A CHANGING WORLD" Anderson, J.M. (Canada)

"CARTOGRAPHIC LANGUAGE AND PRODUCTION OF KNOWLEDGE: TEACHING LOCAL GEOGRAPHY WITH A MUNICIPAL SCHOOL ATLAS" Doín de Almeida, R. (Brazil)

**SESSION 2: Tuesday 12th (Room 4-2)**

**16:00 – 17:30.** Session matter: "GIS, NEW CARTOGRAPHIC TECHNOLOGY AND CHILDREN" Chair: Reyes, J.

"BRINGING GIS TO SCHOOLS – CHALLENGE OR CHILDS PLAY?" Olivier, A. (South Africa)

"PRIMARY CHILDREN'S COLLABORATIVE CARTOGRAPHY: COMMUNICATION AND MAPPING PROCESSES." Owen, D. (United Kingdom)

"VISUALIZATION OF AN URBANIZING AND GLOBALIZING WORLD WITH THE CITYSCAPE METAPHOR" Ito, K. (Japan), Ota, H., Okabe, T. and Fukushima, K.

"TEACHERS' OPINIONS OF THE INCORPORATION OF GIS IN THE UPPER SECONDARY SCHOOLS IN FINLAND" Ratinen, I. (Finland) and Johansson, T.

**SESSION 3: Wednesday 13th (Room 4-2)**

**14:00 – 15:30.** Session matter: "EDUCATIONAL CARTOGRAPHY" Chair: Owen, D.

"LEGIBILITY AND LEARNING EFFECTIVENESS OF THE "NATIONAL ATLAS OF ISRAEL FOR SCHOOLS"" Soffer, T. (Israel), Shachar, A. and Tzionit, S.

"USING OPEN SOURCE TECHNOLOGIES TO PROVIDE A TEMPLATE FOR PUBLISHING SCHOOL ATLASES ON THE WEB" da Silva Ramos, C. (Brazil), Cartwright, W. and Doín de Almeida, R.

"EDUCATIONAL CARTOGRAPHY: MAPPING A THEORETICAL FRAMEWORK" Wiegand, P. (United Kingdom)

"CHILDREN'S CARTOGRAPHY: PAST, PRESENT AND FUTURE" Trifonoff, K.M. (USA)

"«MULTIMEDIA GEOGRAPHIC SCHOOL ATLAS» BUILDING CITIZENSHIP AMONG CHILDREN AND YOUTH" Kally de Almeida Rex, H.K. (Brazil), Kyioe Ito, H. and Fontes Barreto, W.

**SESSION 4: Wednesday 13th (Room 4-2)**

**16:00 – 17:30.** Session matter: "TEACHING AND LEARNING WITH MAPS" Chair: Trifonoff, K.M.

"READING THEMATIC MAPS IN ARGENTINE AND HUNGARIAN SCHOOLS: EXPERIENCES IN BOTH COUNTRIES" Reyes Nuñez, J. J. (Hungary), Juliarena de Moretti, C.E., Garra, A.M., Gallé, E., Rey, C.A., Alves de Castro, M.V. and Dibiase, A.S.

"A CONTROLLED MAPPING EXPERIMENT ON TEACHING EARTH SCIENCE CONCEPTS" Livni, S. (Israel) and Bar, V

"GEOGRAPHY EDUCATION AND THE MAP-MAKING IN THE ELEMENTARY SCHOOL" Vanzella Castellar, S.M (Brazil)

**THEME 21:**

**GENDRE AND UNDER-  
REPRESENTED GROUPS AND  
CARTOGRAPHY.**

**SESSION 1: Tuesday 12th (Room 3-2)**

**14:00 – 15:30.** Chair: Perkins, C.

"GENDER COMPARISON OF UNDERSTANDING AND INFORMATION EXTRACTING FROM SCHOOL ATLASES IN BULGARIAN SCHOOLS" Bandrova, T. (Bulgaria)

"TWO BARRIERS TO CARTOGRAPHICAL PRESENTATION OF "UNDER-REPRESENTED" GROUPS WITHIN THE GLOBAL POPULATION" Krzywicka-Blum, E. (Poland)

"WOMEN IN CARTOGRAPHY (BOTSWANA CASE)" Mmasepatela Phalaagae, L. (Botswana)

**SESSION 2: Tuesday 12th (Room 3-2)**

**16:00 – 17:30.** Chair: Krzywicka-Blum, E.

"COMMUNITY MAPPING: CHANGING LIFESTYLES THROUGH PARTICIPATION" Perkins, C. (United Kingdom)

"THE ROLE OF THE WOMAN IN THE NATIONAL ATLAS OF SPAIN" Abad, M.D. (Spain) and Sánchez-Ortiz, P.

"THE RESEARCH ON REPRESENTATION OF WOMEN MAP" Dongmei, Y. (China), Luohai, D. and Liguó, Z.

**THEME 22:**

**MAPS FOR THE BLIND AND  
VISUALLY IMPAIRED.**

**SESSION 1: Friday 15th (Room 7-2) 09:00**

**– 10:30.** Session matter: "TACTILE MAPS: USE AND PRODUCTION" Chair: Cartwright, W.

"FEELING OUR WAY: TACTILE MAP USER REQUIREMENTS- A SURVEY" Rowell, J. (United Kingdom) and Ungar, S.

"LANDMARKS FOR NAVIGATORS WHO ARE VISUALLY IMPAIRED" Tsuji, B. (Canada) and Lindgaard, G.

"NEEDS OF THE TACTILE MAP MAKERS" Lobben, A. (USA)

"TACTILE MAPS FOR PRESCHOOL CHILDREN WITH VISUAL IMPAIRMENT: THE CURRICULUM" Hirn, H. (Finland)

"TACTILE MAP PRODUCTION FOR THE VISUALLY IMPAIRED USER: EXPERIENCES IN LATIN AMERICA" Reinaldo Gimenes de Sena, C.C. (Brazil) and Ribeiro do Carmo, W.

**SESSION 2: Friday 15th (Room 7-2) 11:00**

**– 12:30.** Session matter: "TACTILE MAPPING: PERCEPTUAL & COGNITIVE APPROACHES" Chair: Jacobson, D.

"TACTUALIZATION' OF SPATIAL INFORMATION: TOWARDS A PERCEPTUAL-COGNITIVE APPROACH TO MAP DESIGN" Ungar, S. (United Kingdom), Rowell, J., Jehoel, S. and McCallum, D.



# Technical Sessions

## Oral Presentations

"A SCIENTIFIC APPROACH TO TACTILE MAP DESIGN: THE MINIMUM ELEVATION OF TACTILE MAP SYMBOLS" Jehoel, S. (United Kingdom), Rowell, J. and Ungar, S.

"THE UNIQUENESS OF SYMBOL PROFILE AS A DESIGN VARIABLE IN TACTILE CARTOGRAPHY" Dinar, S. (United Kingdom) and Rowell, J.

"OBTAINING GEOGRAPHICAL INFORMATION FROM A VIRTUAL MAP WITH A HAPTIC MOUSE" Jansson, G. (Sweden) and Pedersen, P.

"MAPS FOR THE BLIND AND VISUALLY HANDICAPPED" Singhal, V. (India)

**SESSION 3: Friday 15th (Room 7-2) 14:00 – 15:30.** Session matter: "TACTILE MAPPING: TECHNOLOGICAL INNOVATION" Chair: Ungar, S.

"PRODUCTION OF COMPUTER-AIDED TACTILE MAPS FOR THE BLIND" Ozagac, S. (Turkey)

"A MAP-READER SOFTWARE FOR VISUALLY IMPAIRED PEOPLE" Busnadiago Gutiérrez, C. (Spain)

"EXTENDING TACTILE MAP DISPLAYS INTO MULTIMODAL AUDITORY AND HAPTIC INTERFACES" Jacobson, R.D. (Canada)

### THEME 23: PLANETARY CARTOGRAPHY.

**SESSION 1: Tuesday 12th (Room 1-1) 14:00 – 15:30.** Session matter: "PLANETARY MAPS AND THEIR REVISION" Chair: Dorrer, E.

"PRECISE TOPOGRAPHIC AND THEMATIC MAPS OF PLANET MARS" Albertz, J. (Germany), Wählich, M., G. Neukum, Stephan and Harmut

"EXPERIENCE WITH SHAPE-FROM-SHADING FOR THE REFINEMENT OF SPATIAL DATA FOR MARS CARTOGRAPHY FROM MARS EXPRESS HRSC IMAGERY" Dorrer, E. (Germany), Mayer, H., Ostrovskiy, A., Reznik, S., Renter, J. and Neukum, G.

"PHOBOS AND DEIMOS – A NEW MAP IN THE SERIES OF MULTILINGUAL RELIEF MAPS OF TERRESTRIAL PLANETS AND THEIR MOONS" Shingareva, K.B. (Russia), Krasnopevtseva, B. V., Leonenko, S.M., Fleis, M.E., Buchroithner, M.F., Waelder, O. and Stooke, P.

"REMAPPING PHOBOS USING MARS EXPRESS HRSC / SRC IMAGES" Duxbury, T.C. (USA), Hoffman, H., Oberst, J., Giese, B., Kirk, R., Neukum, G. and the HRSC Co-I Team

**SESSION 2: Tuesday 12th (Room 1-1) 16:00 – 17:30.** Session matter: "PLANETARY THEMATIC MAPPING" Chair: Shingareva, K.B.

"GEOLOGIC MAPPING OF VOLCANIC AND AEOLIAN FEATURES ON MARS USING THEMIS DATA" Zimbelman, J.R. (USA) and Shockey, K.M.

"DATA AND METHODOLOGY USED ON THE GEOLOGICAL CARTOGRAPHY OF THE ELYSIUM REGION, MARS." de Pablo, M.A. (Spain), Dohm, J. and Márquez, A.

"NEW ELEMENTAL ABUNDANCE MAPS INTEGRATING OPTICAL AND GEOCHEMICAL DATA ON THE LUNAR SURFACE" Kaydash, V. (Ukraine), Shkuratov, Y., Omelchenko, V., Stankevich, D.

"ANALYSIS OF MERCURIAN CRATERS BY MEANS OF CARTOGRAPHIC METED" Kozlova E.A. (Russia), Sitnikov, B.D., Rodionova, J.F. and Shevchenko, V.V.

**SESSION 3: Wednesday 13th (Room 1-1) 16:00 – 17:30.** Session matter: "GIS FOR PLANETARY MAPPING AND EDUCATION" Chair: Zimbelman, J.

"GIS «SOLAR SYSTEM PLANETS» CASE STUDY OF THE ARCGIS PLANET DATA MODE" Cherepanova, E. (Russia), Leonenko, S.M., Karachevtseva, I.P. and Shingareva, K.B

"COMPILATION OF A GLOSSARY OF INTERNATIONAL TERMS RELATED TO PLANETARY CARTOGRAPHY" Shingareva, K. (Russia), Zimbelman, J.R. and Dorrer, E.

"PLANETARY MAPS IN EDUCATION" Hargitai, H. (Hungary), Bérczi, S. and Shingareva, K.

### THEME 24: RESEARCH AND DEVELOPMENT: NEW PRODUCTS AND CARTOGRAPHIC SYSTEMS.

**SESSION 1: Monday 11th (Room 2.1) 14:00 – 15:30.** Chair: Colomer, J.L.

"INTEROPERABILITY GPS AND GALILEO: WHERE WE ARE? NEEDS AND BENEFITS FOR CARTOGRAPHY." Hernández Ariño, S. (Spain) and Cocho González, D.

"LIDAR APPLICATIONS TO ROCK FALL HAZARD ASSESSMENT IN ALL DE NÚRIA" Ruiz, T. (Spain), Navarro, M. And Arnó, G.

"USING CAC AND GIS TO MAP THE PREVALENCE OF POVERTY AND ACCESS TO BASIC SERVICES ACROSS THE REGION OF THE WESTERN CAPE PROVINCE" Pillay, R. (South Africa)

"TOWARDS A GEOGRAPHIC INFORMATION SYSTEM ENVIRONMENT FOR MAPPING THE WORLDS WATER RESOURCES" Kätzberger, G. (Austria), Pucher, A. and Kriz, K.

"CARTOGRAPHY DATABASE AND GIS: NOT ENEMIES, BUT ALLIES!" Hardy, P. (USA) and Kressmann, T.

**SESSION 2: Monday 11th (Room 2-1) 16:00 – 17:30.** Chair: Neumann, A.

"A MATCHING APPROACH FOR THE INTEGRATION, CHANGE DETECTION AND ADAPTATION OF HETEROGENEOUS VECTOR DATA SETS" Von Goessel, G. (Germany)

"DTM GENERATION FROM LIDAR DATA FOR HYDRAULIC MODELS" Gomez, A. (Spain), Serrano, J. and Casalprim, D.

**SESSION 3: Tuesday 12th (Room 6-2) 09:00 – 10:30.** Chair: Tikunov, V.

"THE MAKING OF A NATIONAL CORE GEO-INFORMATION DATASET. FROM CONCEPT TO VISUALISATION AND ONLINE DELIVERY" Bakker, N. J. (The Netherlands)

"AN APPROACH TO COMPREHENSIVE FLEET MANAGEMENT BY MEANS OF A WEB SERVICES PLATFORM" Hernández-Bajo, A. (Spain)

"CARTA DIGITAL. SPANISH MILITARY GIS" Palacio, J. (Spain)

"NEW CARTOGRAPHIC PRODUCTS IN ENGINEERING APPLICATIONS" López-Cuervo y Medina, S. (Spain)

**SESSION 4: Tuesday 12th (Room 6-2) 11:00 – 12:30.** Chair: Hardy, P.

"MENTAL MAPPING OR "SOFT-GIS" IN URBAN PLANNING. GIS-BASED CARTOGRAPHIC INSPIRATION FOR PHYSICAL PLANNING" Szegő, J. (Sweden)



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"MAPPING ON THE FLY: THE INTEGRATION OF USER-DEFINED MAP PROJECTION WITHIN DIFFERENT EXISTING PROJECTIONS IN AN OVERNATIONAL CONTEXT" Surace, L. (Italy), Cima, V. and Maseroli, R.

"THE MAPBEAN PROJECT" Hardisty, F. (USA)

"DIGITAL GLOBES – FROM VIRTUAL TO REAL" Riedl, A. (Austria)

**SESSION 5: Tuesday 12th (Room 6-2)**

**14:00 – 15:30.** Chair: Von Goessel, G.

"CARTOGRAPHIC SYMBOLS FOR LANDMINE HAZARDS AND HUMANITARIAN DEMINING" Kostelnick, J. (USA), Dobson, J., Egbert, S. and Dunbar, M.

"NAVIGATION IN SPACE, TIME AND TOPIC – INTERDEPENDENCIES OF SPATIAL, TEMPORAL AND THEMATIC NAVIGATION IN TWO DIMENSIONAL INTERACTIVE MAPS" Neumann, A. (Switzerland)

"MAP SYMBOL BREWER – A NEW APPROACH FOR A CARTOGRAPHIC MAP SYMBOL GENERATOR" Schnabel, O. (Switzerland)

"AUTOMATED DERIVATION OF TOWN PLANS FROM LARGE SCALE DATA IN A CARTOGRAPHIC PRODUCTION SYSTEM" Petzold, I. (Switzerland), Burghardt, D. and Bobzien, M.

**THEME 25:**

**HISTORY OF COLONIAL  
CARTOGRAPHY IN THE 19TH  
AND 20TH CENTURIES.**

**SESSION 1: Monday 11th (Room 1-1)**

**14:00 – 15:30.** Session matter:  
"AUSTRALASIA" Chair: Liebenberg, E.

"COLONIAL CARTOGRAPHY OF THE NETHERLANDS EAST INDIES 1816-1942" Ormeling, F. (The Netherlands)

"SUMATRA UNVEILED. THE CONTRIBUTION OF THE GEOGRAPHICAL SOCIETY OF THE NETHERLANDS IN THE MAPPING OF SUMATRA, 1877-1879" Van den Brink, P. (The Netherlands)

"PETERMANN'S GEOGRAPHISCHE MITTEILUNGEN' AND THE HIGH MOUNTAIN MAPPING OF ASIA IN THE 19TH CENTURY" Demhardt, I.J. (Germany)

"AUSTRALIAN PLATES IN JOHN ARROWSMITH'S LONDON ATLAS OF UNIVERSAL GEOGRAPHY" Prescott, D. (Australia)

**SESSION 2: Monday 11th (Room 1-1)**

**16:00 – 17:30.** Session matter: "CENTRAL AFRICA" Chair: Demhardt, I.J.

"HENRY MORTON STENLEY – EXPLORATION AND MAPPING OF THE CONGO RIVER (1874-1877)- SOLVING THE LAST GREAT MYSTERY OF AFRICAN CONTINENT-" Slukan Altic, M. (Croatia)

"BOUNDARY SURVEYS IN THE LATE 19TH AND EARLY 20TH CENTURIES" Collier, P. (United Kingdom)

"THE EVOLUTION OF THE CARTOGRAPHY OF KATANGA (D.R.CONGO) DURING THE BELGIAN COLONIAL PERIOD." De Maeyer, P. (Belgium), Vanoutrive, T., Vansteenvoort, L., Collard C. and De Temmerman, L.

"MAPPING OF MAIN ARTERY NETWORK AND COLONIAL PORTERAGE IN CAMEROON (1900-1940)" Tchindjang, M. (Cameroon), Joseph Tanga Onana, Zephania Nji Fogwe, Athanase Bopda, Cornelius Mbifung Lambi and Esseck David

**SESSION 3: Tuesday 12th (Room 1-1)**

**09:00 – 10:30.** Session matter:  
"SOUTHERN AFRICA" Chair: Collier, P.

"THE ARROWSMITH AND S.D.U.K. MAPS OF SOUTH AFRICA OF 1834 – SOURCE MATERIAL AND CARTOGRAPHICAL SIGNIFICANCE" Liebenberg, E. (South Africa)

"THE IMPERIAL MAP CAPE COLONY AND LATER MILITARY MAPS OF THE CAPE COLONY, SOUTH AFRICA." Board, C. (United Kingdom)

"MAPPING THE NAMIB-DESERT: THE "BERGRECHTSKARTE" OF 1920" Moser, J. (Germany)

**THEME 26:**

**OTHER THEMES: CARTOGRAPHY  
AND ADVERTISING, MAPS IN  
THE MEDIA, CENSUS  
CARTOGRAPHY, CADASTRAL  
MAPS, THREE DIMENSIONAL  
MAPPING, NEW CONCEPTS IN**

**CARTOGRAPHIC SYMBOLOGY,  
SPACE AND TIME IN GIS,  
TOPONYMY.**

**SESSION 1: Tuesday 12th (Room 5-2)**

**09:00 – 10:30.** Session matter:  
"TOPONYMY AND MAPS" Chair: Ormeling, F.

"TOPONYMY THESAURUS. ITS CARTOGRAPHIC INTEGRATION IN A BILINGUAL REGION" Santamarina Fernández, A. (Spain), Navaza Blanco, G., García Cancela, X. and García Pazos, F.

"AUTOMATIC INFORMATION SEARCHING SYSTEM OF THE STATE CATALOG OF GEOGRAPHICAL NAMES." Zhukovsky, V. (Russia) and Boginsky, V.

"TOPONYMIC DATABASES ON DIGITAL CARTOGRAPHY. TOOLS AND UTILITIES." Parella, M. (Spain)

"TOPONYMY STRUCTURATION FOR MEANING RETRIEVAL" Ferland, Y. (Canada)

"THE THEMATIC MAPS DERIVED OF THE MICROTOPONYMY AS GEOGRAPHIC INFORMATION SOURCE." Rodríguez Gomila, R. (Spain) and Grimalt Gelabert, M.

**SESSION 2: Tuesday 12th (Room 6-2)**

**16:00 – 17:30.** Session matter: "TIME AND MAPS" Chair: Borrero, S.

"GEOREFERENCING THE 1930'S FLIGHT OF RUIZ DE ALDA OVER THE SEGURA RIVER BASIN" Urmeneta, B. (Spain) and Barberena, A.

"MAPPING THE LAST FORTY YEARS OF SWEDISH URBAN DEVELOPMENT" Szegö, J. (Sweden)

"VISUALIZATION OF EVENTS IN TIME-SERIES OF REMOTE SENSING DATA" Turdukulov, U. (The Netherlands) and Kraak, M-J.

"TIMELINES, TEMPORAL RESOLUTION, TEMPORAL ZOOM AND TIME GEOGRAPHY" Kraak, M-J. (The Netherlands)

**SESSION 3: Wednesday 13th (Room 5-2)**

**14:00 – 15.30.** Session matter: "CENSUS AND BOUNDARIES" Chair: Aranaz, F.

"CENSUS CARTOGRAPHY; A CASE STUDY OF KENYA CENSUS TAKING" Odhiambo E.A. (Kenya) and Ndilinge, M.

"BOUNDARIES. FIELDWORKS AND GIS MANAGEMENT." Torres, M. (Spain)

# Technical Sessions

## Oral Presentations

"MAP IMAGES IN AMERICAN POLITICAL RHETORIC" Edsall, R.M. (USA)

### **SESSION 4: Wednesday 13th (Room 5-2)**

**16:00 – 17:30.** Session matter: "GEOPHYSICAL AND GEOLOGICAL MAPS AND TOPOGRAPHICAL NETWORKS" Chair: Pérez, R.

"A NEW APPROACH FOR REFINING THE GLOBAL STRATIGRAPHIC CHART" J. M. Pellé (Belgium), Ph. Rossi, Ph. De Maeyer and M. Brondeel

"GEOPHYSICAL MAPS OF SPAIN" Martínez Solares, J.M. (Spain), Gil, A., Socías, I., Mezcuca, J., Martin Martin, A.J. and Marin, V.

"SPANISH GEOLOGICAL MAPPING AT SCALE 1:50.000: FROM THE PAPER TO THE GEOINFORMATICS." Iniesto, M.J. (Spain)

"FEATURES AND OPERABILITY OF THE AIRPORT TOPOGRAPHICAL CONTROL NETWORK IMPLEMENTED IN AENA AIRPORTS" López-Pantoja Lamarca, A. (Spain), Suárez Suárez, M. and Aranda Molina, T.

"CONSTRUCTING THE NATIONAL IMAGERY BANK" Cristancho V, D.A. (Colombia)

"The Digital Soil Map of Wallonia (DSMW/CNSW)" Veron, PH. (Belgium), Bah, B., Bracke, CH., Lejeune, PH, Rondeux, J., Bock, L. and Mokadem, A.I.

### **SESSION 5: Tuesday 12th (Room 7-2)**

**09:00 – 10:30.** Session matter: "PROPERTY MATTERS" Chair: Miranda, J.

"LAND REGISTRY AS AN INSTRUMENT OF IDENTIFICATION AND PROTECTION OF THE PUBLIC PROPERTY" Requejo Liberal, J. (Spain)

"USE OF DIGITAL HISTORICAL MAPS IN THE PROPERTY FORMATION OF SWEDEN" Qvist, E. (Sweden)

"COMPILING, ORGANIZING, STRUCTURING AND PUBLISHING IN THE INTERNET THE URBAN PLANNING OF THE WHOLE GALICIA REGION" Álvarez Vicente, J. L. (Spain), Redondo Porto, A. and Fargas, J.

"FAST AND LIABLE CARTOGRAPHY UPDATE USING EGNOS AND GALILEO" Toledo, M. (Spain)

"SITMUN PROJECT (MUNICIPAL TERRITORIAL INFORMATION SYSTEM)" Zañartu Bezanilla, C. (Spain)

## **THEME 27: ORIENTEERING MAPS**

### **SESSION 1: Tuesday 12th (Room 1-1)**

**11:00 – 12:30.** Chair: Rystedt, B.

"MAPPING STANDARD FOR SPRINT ORIENTEERING: STANDARDIZED COMPETITION MAPS FOR URBAN, PARK AND FOREST AREAS" Zentai, L. (Hungary)

"ORIENTEERING MAPS IN SLOVENIA" Petrovic, D. (Slovenia)

"THE ORIENTEERING MAPS PRODUCTION: QUALITY CONTROL" Muñoz Nieto, A. L. (Spain), Herrero Matías, M. and Vidal Triquell, M.

"ORIENTEERING MAPS OF VIENNA – DATA ACQUISITION AND CARTOGRAPHIC DATA MODELLING" Ditz, R. (Austria) and Gartner, G.

## **THEME 28: GEOSPATIAL ANALYSIS AND MODELLING.**

### **SESSION 1: Friday 15th (Room 3-2) 11:00 – 12:30.** Chair: Jiang, B.

"A FRAMEWORK FOR INTERACTIVE SEARCHING AND MAPPING OF PERSONAL SPATIAL INFORMATION" Shiraishi, Y. (Japan) and Arikawa, M.

"VISUALIZATION OF SPATIO-TEMPORAL PATTERNS IN PUBLIC TRANSPORT DATA" Shrinivasan, Y.B. (The Netherlands) and Kraak, M.

"MOBLOG BASED MAPPING WITH TRACK-BACKS ON SPATIO-TEMPORAL RELATIONS" Arikawa, M. (Japan), Hayashi, T. and Sezaki, K.

"CLUSTERING DYNAMIC MAP OBJECTS BASED ON DENSITY MEASURES" Stefanakis, E. (Greece)

## **THEME 29: EARLY WARNING AND RISK MANAGEMENT.**

### **SESSION 1: Friday 15th (Room 8-2) 09:00 – 10:30.** Chair: Ottichilo, W.

"PREPARING AN ANSI STANDARD FOR EMERGENCY AND HAZARD MAPPING SYMBOLOGY" Dymon, U.J. (USA)

"DISASTERS MAPPING IN ALGERIA AND MANAGEMENT USING G.I.S AND REMOTE SENSING TECHNOLOGIES" Smara, Y. (Algiers), Belhadj-Aissa, A. and Belhadj-Aissa, M.

"USING REMOTE SENSING AND GIS FOR GLOBAL ASSESSMENT OF FIRE DANGER" Chuvieco, E. (Spain)

"MAPS FOR COMPREHENSIVE RISK MANAGEMENT" Dransch, D. (Germany) and Walz, U.

### **SESSION 2: Friday 15th (Room 8-2) 11:00 – 12:30.** Chair: Lorenzo Martínez, R. M.

"ENVIRONMENTAL MAPS' SERVER" Hradec, J. (Czech Republic)

"THE DEVELOPMENT OF A SPATIAL FRAMEWORK TO IMPROVE SERVICE DELIVERY TO ORPHANS AND OTHER CHILDREN MADE VULNERABLE BY HIV/AIDS IN KWAZULU-NATAL, SOUTH AFRICA" Erskine, S. (South Africa)

"A GIS TOOL FOR THE EVALUATION OF THE SEISMIC RISK: APPLICATION TO THE SEISMIC RISKS OF ALGIERS." Abdat, N. (Algeria), Alimazighi, Z., Allili, T. and Beljoudi, H.

### **SESSION 3: Friday 15th (Room 2-1) 16:00 – 17:30.** Chair: Dymon, U.

"HISTORICAL CARTOGRAPHY FOR NATURAL HAZARDS" Davoine, P. (France), Gensel, J. and Arnaud, A.

"HISTORICAL MAPS PROMOTE RECENT FLOOD RISK RESEARCH –THE CASE OF THE UPPER ELBE RIVER" Schumacher, U. (Germany) and Witschas, S.

"POVERTY MAPPING – A CASE STUDY OF KENYA" Odhiambo, E.A. (Kenya) and Ndilinge, M

"GIS AS KEY TOOL IN THE ENVIRONMENTAL DECISION MAKING AT LOCAL LEVEL. THE CASE OF THE RIVER BASIN OF THE CORBONES" Joya Reina, M.d.P. (Spain)



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# Poster Presentations

## POSTERS PRESENTATIONS

### 1st FLOOR PLANT

Sessions	Tuesday 12th	Wednesday 13th	Thursday 14	Friday 15th
<b>Session 1</b> 9-10,30	T19 T16 T 10 N poster: 35	T4 T14  T23 N poster: 26	T2  T9 N poster: 24	T1 T5 N poster: 28
<b>Session 2</b> 11-12,30	T 6 T13 T21 T25 N poster: 20	T3 T7 T11 T24 N poster: 19	T12 T15 T22 N poster: 23	T26 N poster: 26

# Technical Sessions

## Poster Presentations

### THEME 1

#### THEORETICAL CARTOGRAPHY

- "ANAMORPHIC TRANSFORMATIONS OF REFERENCE UNITS IN THE THEMATIC CARTOGRAPHICAL MODELLING" Michalski, A. (Poland)
- "A SURVEY ON THE THEORY AND TECHNOLOGY OF CONTEMPORARY CARTOGRAPHY" Li, C. (China) and Wang, J.
- "THE METRIC SPACE OF EARTH INFORMATION AND GLOBAL GIS" Peng, H. (China), Peilan, L., Chuanyong, Y. and Hai, H.
- "UBIQUITOUS CARTOGRAPHY AND ITS TERMINOLOGY" Wolodtschenko, A. (Germany) and Morita, T.
- "DIGITAL MAP DESIGN" Guo, L. (China), Lilin and He, Z.
- "MAPS ON HISTORY: PRINCIPLES OF DESIGN AND MAJOR PROBLEMS" Beconyte, G. (Lithuania)
- "CARTOSEMIOTIC RESEARCHES OF ECOLOGICAL ATLASES" Wolodtschenko, A. (Germany) and Rotanova, I
- "ON THE FIGURE-TI-GROUND PHENOMENON: A TEST AND ITS ANALYSIS" Waelder, O. (Germany) and Buchroithner, M.
- "COGNITIVE EXPERIMENT ON ADAPTIVE USER INTERFACE FOR CARTOGRAPHIC VISUALIZATION SYSTEM" Yun, L. (China), Yufen, C. and Yingjie, W.
- "THE ONTOLOGY OF GEOINFORMATION" Buczkowski, K. (Poland)

### THEME 2

#### MAP PROJECTIONS

- "THE SOLDNER PROJECTION OF THE WHOLE ELLIPSOID" Pedzich, P. (Poland)
- "THE IMPORTANCE OF GEODETICAL SYSTEMS FOR PETROLEUM EXPLOTATION" Alvarez, G.O. (Spain)

### THEME 3

#### MAP DESIGN AND PRODUCTION

- "PROFESSIONAL LABELLING AND TEXT ANNOTATION TECHNIQUES WITH ArcMap" Murad-al-shaikh, M.A. (USA)
- "FROM DIRECT ACTOR TO ENGAGED GUIDE: DEVELOPING A MANUAL OF MAPPING CONVENTIONS FOR A WORLD WIDE CONSERVATION ORGANIZATION" Denil, M. (USA)
- "MAP DESIGN FOR NAVIGATION PURPOSES" Ulugtekin, N. (Turkey) and Dogru, A.O.
- "MAP DESIGN AND PRODUCTION FOR RESEARCH PURPOSES IN THE NIGERIAN UNIVERSITY SYSTEM" Obot, M.M. (Nigeria)
- "THE RESEARCH ON EQUIVALENCE OF SPATIAL RELATIONS IN AUTOMATIC PROGRESSIVE CARTOGRAPHIC GENERALIZATION" Qing Sheng, G. (China) and Xiao Chu, D.
- "A SYSTEM TO IMPROVE COLOUR CONTRASTS BETWEEN SYMBOLIZATIONS IN RISK MAPS" Chesneau, E. (France), Ruas, A. and Bonin, O.
- "THE EVRS AND NEED FOR CONTOUR UPDATING IN NATIONAL TOPOGRAPHIC MAPS" Oksanen, J. (Finland) and Sarjakoski, T.
- "ASSIGNMENT OF URBAN THOROUGHFARE NAMES: A COMPARISON BETWEEN MEANING AND APPLICATION." Okpala-Okaka, C. (Nigeria)

### THEME 4

#### EDUCATION AND TRAINING IN CARTOGRAPHY. INTERNET COURSES

- "MAPPING OF DISTANCE LEARNING IN GEOMATICS THROUGHOUT THE WORLD" Tchindjang, M. (Cameroon), Nziengui, M., Edou, M., Konfor, N.I. and Francis Menga, V.
- "UP-TO DATE TECHNIQUE OF STUDENT'S EDUCATION IN CARTOGRAPHIC FACULTY OF MOSCOW STATE UNIVERSITY OF GEODESY AND CARTOGRAPHY" Nyrtsov, M. (Russia)

"MAPS AND GEOINFORMATION IN A LIFELONG LEARNING PROCESS" Brande-Lavridsen, H. (Denmark)

"AN EDUCATIONAL AND TRAINING PROPOSAL FOR APPLYING QUALITY TO CARTOGRAPHY" Ariza López, F.J. (Spain), García Balboa, J.L. and Atkinson Gordo, A.D.J.

"CARTOGRAPHIC DESIGN PRINCIPLES IN INTERACTIVE MULTIMEDIA – PRESENTING INFORMATION SENSIBLY." Dixon, E. (South Africa)

"CARTOGRAPHIC PRODUCTION: LEARNING THROUGH A REAL PROJECT." Coll, E., Irigoyen, J., Martinez, J. and Velasco, E.

### THEME 5

#### DIGITAL CARTOGRAPHY AND GIS FOR SUSTAINABLE DEVELOPMENT OF TERRITORIES

- "ADMINISTRATIVE AND SPATIAL EVOLUTION OF YAOUNDE TOWN FROM 1898 to 1992" Tchindjang, M. (Cameroon), Atangana Athanase Bopda, P., Eloundou Messi, B., Ndjava Doutat, C., Kayo Ngouleu Mbofang, J. and Fodouop, K.
- "APPLICATION OF A GEOGRAPHICAL INFORMATION SYSTEM TO THE STUDY AND ANALYSIS OF THE PROBLEMS DERIVATED FORM THE SALINITY OF THE IRRIGATION OF SEGURA RIVER" Parra Galant, G. (Spain) and Cordero Gracia, J.
- "PRELIMINARY STUDY ON INTEGRATION OF STATISTICAL DATA AND SPATIAL DATA IN GIS" Zhao, R. (China) and Dong, C.
- "QUALITATIVE STUDIES WITH GIS-TOOLS AND HISTORICAL MAPS TO ENSURE DEVELOPMENT OF PERIPHERAL VILLAGES IN HELSINGBORG MUNICIPALITY" Mats, C. (Sweden) and Cederin, K.
- "THE USE OF GIS TECHNOLOGIES FOR CREATING TOURIST REFERENCE SYSTEMS" Dorozhynskyy, O. (Ukraine), Kolb, I. and Fargal, A.
- "THE DISCUSSION ABOUT THE DEVELOPMENT AND APPLICATION OF PPGIS IN CHINA" Zongyi, H. (China), Tao, L. and Yang, B.



“THE RELEVANCE OF DIGITAL MAPPING; GEOGRAPHIC INFORMATION SYSTEMS TO SUSTAINABLE DEVELOPMENT IN NIGERIA” Oyinloye, M.A. (Nigeria)

“THE DESIGN ON REVIVALIZATION OF LANDSCAPE OF AN URBAN GREEN WITH THE USE OF CARTOGRAPHIC METHODS OF DECISION AID” Wyczalek, I. (Poland)

“GUIDELINES FOR NATIONAL GIS IMPLEMENTATION STRATEGIES” Wadidi, E.F. (Sudan) and Abdellatif Abdalla, K.

“3D MODELS OF PHELEGRAEAN AREA (NAPLES) FOR GIS APPLICATIONS” Oliviero, C. (Italy), Parente, C., Pennacchio, D. and Santamaria, R.

“GIS READY GEO-SPATIAL DATABASE” Singh, S.V. (India)

“MAPPING OF TOPOGRAPHY AND VEGETATION IN SHIRAKAMI MOUNTAINS «WORLD HERITAGE NATURAL RESOURCES» IN JAPAN” Sato, H. (Japan) and Sekiguchi, T.

“AN ALGORITHM DESIGN BASED ON STREAM COMPUTING IN GRID GIS” Zhang, D. (China) and Gui, X.

“URBAN SOCIO-SPATIAL STRUCTURE IN WEST AFRICA” Akinyemi, F.O. (Germany)

“THE USE OF GIS IN CARTOGRAPHY MAPPING OF GREEN URBAN AREAS IN MEDIUM SIZED CITIES OF BRAZIL, SUCH AS RIO CLARO-SP” Leite, Dilza Nalin de Oliveira (Brazil) and Lombardo, Magda

“GEO-INFORMATION FOR SUSTAINABLE MANAGEMENT OF LAND RESOURCES IN CROATIA” Husnjak, S. (Croatia) and Kusan, V.

“THE USE OF A GIS FOR ANALYSE DUNE SYSTEMS, THE CASE OF PLATAMONA-MARRITZA (NORTHERN SARDINIA, ITALY)” Balduzzi, I. (Italy), Bozzano, A., Corradi, I. and Ivaldi, R.

“GIS APPLICATION TO EVALUATE THE EROSION OF THE LIGURIAN COAST” Ferrari, M. (Italy), Bolens, S. And Bozzano, A.

“USING GIS MODELLING TO ASSESS ACCESSIBILITY IMPROVEMENTS AND ITS POTENTIAL INDIRECT EFFECTS ON THE ENVIRONMENT DUE TO TRANSPORT INFRASTRUCTURE PLANS DEVELOPMENT” Ortega, E. (Spain), Mancebo, S. Sánchez, A. López, E.

“A RASTER-VECTOR APPROACH TO GIS MODELLING: NATURAL QUALITY CARTOGRAPHY” Mancebo, S. (Spain); Ortega, E., García-Montero, L.G.

## THEME 6

### **SPATIAL DATA INFRASTRUCTURES (NSDI, GSDI AND SDI) DEVELOPMENT, STANDARDS, PRICES AND COPYRIGHT**

“CREATING OF NATIONAL SPATIAL DATA INFRASTRUCTURE OF THE REPUBLIC OF MOLDOVA” Ovdii, M. (Republic of Moldova)

“THE NATIONAL MAP OF BOTSWANA” Monyatsi, M. (Botswana), Phalaagae, L. and Sebina, T.

“IDERIOJA CORPORATIVE MANAGEMENT OF SPATIAL DATA INFORMATION. A FACT.” López García, G. (Spain) and Corredor Fernández, R.

“SDI IN POLAND - CONCEPT OF TOPOGRAPHIC REFERENCE SYSTEM FOR THEMATIC, HARMONIZED DATA BASES” Olszewski, R. (Poland) and Iwaniak, A.

“TOWARDS NATIONAL SPATIAL INFORMATION INFRASTRUCTURE IN POLAND” Baranowski, M. (Poland)

“GALICIAN SDI PROJECT” Gallego Priego, M. (Spain)

“THE SDI IN ASTURIAS”. Rodríguez Menéndez, R. (Spain) and Alvarez, A.

“SPATIAL DATA INFRASTRUCTURES AND THE HISTORIC HERITAGE: THE PROJECT LIFE «TIERMES - CARACENA VALLEY»” Ballari, D. (Spain), Manso, M. and Bernabé, M.A.

## THEME 7

### **DATA CAPTURE AND QUALITY ASSESSMENT OF SPATIAL DATA**

“USE OF THE GIS TO DELINEATE LINEAMENTS FROM LANDSAT IMAGES, DAMMAM DOME, EASTERN SAUDI ARABIA” Hariri, M.M. (Saudi Arabia)

“QUANTIFICATION OF SYSTEMATIC ERRORS IN POSITIONAL QUALITY CONTROL” Atkinson Gordo, A.D.J. (Spain), Ariza López, F.J. and García-Balboa, J.L.

“POSITIONAL QUALITY CONTROL BY MEANS OF THE EMAS TEST AND ACCEPTANCE CURVES” Ariza López, F.J. (Spain) and Atkinson Gordo, A.D.J.

“SAMPLE SIZE AND CONFIDENCE WHEN APPLYING THE NSSDA” Ariza López, F.J. (Spain) and Atkinson Gordo, A.D.J.

“UNCERTAINTY IN THE POPULATION GEOGRAPHIC INFORMATION SYSTEM” Liu, D. (China), Liu, Y. and Ma, W.

“GEOMETRIC CORRECTION OF THE QUICKBIRD HIGH RESOLUTION PANCHROMATIC IMAGES” Aguilar, M. A. (Spain), Aguilar, F., Carvajal, F., Agüera, F. And Sánchez, J.

“RELIABILITY DESIGN FOR DATA FROM IMAGERY” Cothren, J. (USA) and Schaffrin, B.

## THEME 8

### **INCREMENTAL UPDATING AND VERSIONING OF SPATIAL DATA BASES**

“CHANGE DETECTION FROM IMAGES” Armenakis, C. (Canada)

“PRACTICAL CASE OF A PUBLIC ENTITY – HOW TO HAVE UPDATED SPATIAL DATA AND MANAGING TOOLS THANKS TO AN INNOVATE IT SYSTEM AND SPATIAL” Jiménez, C. (Spain)

## THEME 9

### **CARTOGRAPHIC GENERALIZATION AND MULTIPLE REPRESENTATION**

“WORKING ENVIRONMENT CONSTRUCTION FOR THE INTERACTIVE MAP GENERALIZATION SYSTEM” Ai, T. (China) and Zhang, W.

“FRACTAL ATTENUATION ANALYSIS OF CARTOGRAPHIC OBJECT ON CARTOGRAPHIC GENERALIZATION” Li, W. (China) and Wu, H.



# Technical Sessions

## Poster Presentations

- "CARTOGRAPHIC VISUALIZATION OF DISCOVERED SPATIAL ASSOCIATION RULES IN CENSUS DATA" Torun, A. (Turkey) and Duzgun, S.
- "GENERALIZATION OF HIGH-DENSITY RASTER DIGITAL ELEVATION MODELS" Pardo Pascual, J. (Spain), Palomar Vázquez, J. and Porres de la Haza, M.
- "MULTI LEVEL REPRESENTATION OF SPATIAL DATA; APPLICATION IN ARCHAEOLOGY AND ANTHROPOLOGY" Khoumeri, E. (France) and Santucci, J.
- "MULTISCALE SPATIAL DATA BASES CREATION AND CARTOGRAPHIC GENERALIZATION USING HIGH RESOLUTION" Pantazis, D. (Greece), Yingcheng, L., Guo, T., Santimpantakis, K., Karathanassis, H. and Stathakis, D.
- "LAND RESOURCE MAPS" Laagbu, R. (Norway)
- "SEGMENTATION OF LINES BY MEANS OF DOUGLASS PEUCKER APPLIED TO EFFECTIVE AREAS OF THE VISALINGAM AND WHYATT ALGORITHM" Ariza López, F.J. (Spain) and García Balboa, J.L.
- "ROAD LINE SEGMENTATION FOR CARTOGRAPHIC GENERALIZATION: A WAVELET BASED PROCEDURE" García Balboa, J.L. (Spain) and Ariza López, F.J.
- "MAP GENERALIZATION FOR MOBILE DEVICE MAP SERVICES" Park, S. H. (USA)
- "GENERALIZATION OF THE GENERAL GEOGRAPHIC DATABASE" Chybicka, I. (Poland) and Iwaniak, A.
- "AUTOMATIC GENERALIZATION OF RIVER NETWORKS BASED ON CARTOGRAPHIC KNOWLEDGE REPRESENTATION AND REASONING" Xiao, T. (China), Fang, W., Hai-zhong, Q. and Su-lei, Z.
- "QUALITY APPRAISE IN CARTOGRAPHIC GENERALIZATION BASED ON AMBIGUOUS MATHEMATICS" Hongyan, D. (China), Fang, W., Qi, H., Renjian, Z., Haizhong, W. and Huilian, W.
- "RASTER-VECTOR CARTOGRAPHIC NUMERIC DATABASE" Ureña Cámara, M.A. (Spain) and Ariza López, F.J.
- "GENERALIZATION PROCESS FOR URBAN CITY-BLOCK MAPS" Ureña Cámara, M.A. (Spain) and Ariza López F.J.
- "DYNAMIC PORTRAYAL AND DIRECT LOCATION METHOD FOR NEW GEOGRAPHIC INFORMATION PROCESSING WEB SERVICE" Ohno, H. (Japan), Kubo, N., Takakuwa, N., Fujimura, H. and Ishizeki, T.
- "LEVEL OF DETAIL GENERATION OF 3D BUILDING GROUPS BY AGGREGATION AND TYPIFICATION" Anders, K-H. (Germany)
- "CD-ROM "MAP GRAPHIC AND GENERALIZATION" – A NEW TOOL FOR CARTOGRAPHIC DESIGN" Feldmann, H-U. (Switzerland)
- THEME 10**  
**CARTOGRAPHY AND SATELLITE IMAGERY FOR THE MANAGEMENT OF NATURAL RESOURCES AND THE ENVIRONMENT**
- "LAND USE/COVER CHANGE ANALYSES BASED ON REMOTELY-SENSED IMAGERY AND OLD MAPS AS MEANS TO DOCUMENT FRAGMENTATION AND DISTURBANCE FOR EAST-AFRICAN RAINFOREST OVER THE LAST CA. 100 YEARS" Schaab, G. (Germany), Lung, T. and Mitchell, N.
- "GENERATION OF RISK MAPS OF CONTAMINATED AREAS COMBINING GEOGRAPHIC INFORMATION SYSTEMS WITH GEOSTATISTICS" Marqués-Mateu, A. (Spain), Cassiraga, E.F. and Méndez-Romero, F.
- "SATELLITE IMAGERY ELABORATION (ASTER SENSOR, TERRA SATELLITE), IN ORDER TO MAP ROCK DISTRIBUTION IN THE VEGLIA ISLAND (HIGH ADRIATIC SEA)" Geletti, R. (Italy), Favretto, A. and Mauro, G.
- "INTEGRATION OF WATER INFORMATION AT A REGIONAL SCALE." Velasco, X. (Spain), Francés, J. and Echamendi, P.
- "VARIATIONAL METHOD FOR SATELLITE IMAGE RESTORATION AND CLASSIFICATION" Iddir Zait, M. (Algeria), Smara, Y., Chekka, A. and Belouar, H.
- "ESTABLISHING A SYSTEM OF GEOGRAPHICAL INFORMATION WITH A PROFILE APPLICABLE TO RACE AREAS." Ramírez Cardozo, A.G. (Uruguay), Rosas, E.; Bachino, R. and Fleitas, R.
- "CREATION OF A DIGITAL ELEVATION MODEL AND IMPRINTING A PART OF THE COASTLINE OF THE LAKE KERKINIS IN SERRES WITH THE USE OF A G.P.S." Malamatinis, J. (Greece), Baras, T. and Vergos, G.
- "CARTOGRAPHIC VISUALIZATION TECHNIQUES FOR COASTAL WATERSHED CHARACTERIZATION" Yang, X. (USA)
- "ENVIRONMENTAL IMPACT ANALYSES OF QUARRIES LOCATED ON THE ASEAN SIDE OF ISTAMBUL USING REMOTELY SENSED DATA" Saroglu, E. (Turkey), Bektas, F., Dogru, A.O., Musaoglu, N., Kaya, S. and Ormeci, C.
- "LIMNOLOGICAL STUDIES ON ANTHROPOPRESSURE IN THE LIGHT OF CARTOGRAPHICAL RESEAECH METHOD" Strzala, A. (Poland)
- "THE USE OF MAPS IN THE OPERATIONS OF EDO STATE DIRECTORATE OF LANDS AND SURVEYS, NIGERIA" Ufuah, M.E. (Nigeria)
- "WEB MAPPING SERVICE FOR DELIVERING CARTOGRAPHY OF PASTURE RESOURCES OF MURCIA REGION (SPAIN)." Garcia Sánchez, P. (Spain), Erena, M., Correal, E., Robledo, A. and Vicente, M.
- "GEOGRAPHICAL INFORMATION, MANAGEMENT, AND UNCERTAINTY ANALYSIS IN THE BIOSPHERE RESERVE OF URDAIBAI (BIZCAIA, SPAIN)." Zamorano Chico, C. (Spain), Pou Royo, A. and Espiogo González, J.
- "AUTOMATIC EXTRACTION OF DEM UNDER DIFFERENT CANOPY CLOSURE OF EUCALYPTUS GLOBULUS LABILL USING AIRBORNE LASER SCANNING DATA IN GALICIA (SPAIN)" Miranda, D. (Spain)
- "THE UTILIZATION OF VERY HIGH RESOLUTION SATELLITE IMAGERY AS A SOURCE OF INFORMATION IN CARTOGRAPHY ANALYSES OF QUALITY OF URBAN GREEN AREA" Wyczalek, I. (Poland) and Wyczalek, E.
- "ASSESSING AND MAPPING THE EVOLUTION, IN SPACE AND TIME, OF COFFEE LANDS OF THE STATE OF MINAS GERAIS IN BRAZIL" Grossi Chquilloff Vieira, T. (Brazil), Maria Ramos Alves, H., Aparecida Bertoldo, M., Oliveira de Souza, V.C. and Bernardes, T.



"GEOTECHNOLOGIES FOR THE ASSESSEMENT OF THE RELATIONSHIPS BETWEEN COFFEE AND ENVIRONMENT OF AGROECOSYSTEMS OF THE STATE OF MINAS GERAIS IN BRAZIL" Ramos Alves, H.M. (Brazil), Grossi C. Vieira, T., Aparecida Bertoldo, M., Oliveira de Souza, V.C., Pinto Coelho Lacerda, M. and Andrade, H.

"ENVIROMENTAL IMPACT ASSESSMENT OF THE URBAN MAN-MADE LAKE (TEHRAN-DISTRICT 22) BY USING GIS AND RS" Nouri, J. (Iran), Gharagozlou, A., Nourifard, A.

"MAPPING AND REMOTE SENSING: COMPLEMENTARITY OR MORE HANDICAPS" Ben Salem, M. (Tunisia)

"METRIC QUALITY OF HIGH RESOLUTION SENSORS APPLIED TO IMAGE MAPS" Perez, C. (Spain), Sánchez, N and Santos, G.

"THE USE OF DATA FUSION IMAGE OF REMOTE SENSING TO CHARACTERISE THE RISK OF A STEPPIC ENVIRONMENT DEGRADATION (DJELFA, ALGERIA)." Smahi, Z. (Algeria), Bensaid, A.I. and Benhanifia, K.

"FOREST CARTOGRAPHY DERIVED FROM A QUICKBIRD ORTHOMOSAIC FROM MURCIA REGION" Vicente Albaladejo, M., Pérez Cutillas, P., Cabezas Cerezo, J. D. , Pérez Palazón, R., Pecci López, J.

## **THEME 11 MAPS AND THE INTERNET**

"MAPS AND THE INTERNET" Zupan, R. (Croatia) and Franges, S.

"AN RDBMS-SUPPORTED, WEB-BASED, 3D GIS, VISUALISATION AND ANALYSIS TOOL" Hobona, G. (United Kingdom), Fairbairn, D. and James, P.

"LOW COST AERIAL IMAGES FOR HERITAGE 3D RENDERING" Gómez Lahoz, J. (Spain), González Aguilera, D., Arias Pérez, B. and Martínez Rubio, J.

## **THEME 12 INTERNET LOCATION-BASED SERVICES, MOBILE MAPPING AND NAVIGATION SYSTEMS**

"EUREF-IP. TOWARDS AND INTEGRATED GPS+INTERNET POSITIONING SERVICE" Matesanz, J.G. (Spain), Quiros, R., Cano, M.A., Sánchez, J.A., Valdes, M. and Dalda, A.

"AUTOMATIC DATA PROCESSING CONCERNING TURN RESTRICTIONS FOR VEHICLE NAVIGATION" Liu, L. (China)

"APPLICATION OF GEOGRAPHIC INFORMATION SYSTEMS, GPS AND GPRS/WiFi TECHNOLOGIES TO IMPROVE THE QUALITY OF URBAN SERVICES" Sánchez, J. (Spain), Ferrer, R.; Sánchez, P.; Adamez, J and Pereda, R

"RESEARCH AND IMPLEMENTATION OF SOUND VEHICLE NAVIGATION SYSTEM BASED ON REAL-TIME TRAFFIC RESTRICTION AND EMBEDDED SYSTEM" Ailong, L. (China), Dong, Z. and Yan, T.

"EXTRACTION MAIN MAO DATA FROM NAVIGATION ELECTRONIC MAP DATA FORMAT KIWI" Wu, X. (China), Li, Q. and Li, B.

"GIS IN HOME CARE SERVICES – MOBILE POSITIONING IN NEW AREAS" Hedlund, U. (Sweden)

"THE GEOPORTAL IN LOCAL ADMINISTRATION" Sanz, J. (Spain), Coll, E., Martinez, J.C. and Irigoyen, J.

## **THEME 13 MARINE CARTOGRAPHY, NAVIGATION AND OCEAN MAPPING**

"DEPTH SELECTION IN NAUTICA CHARTS PRODUCTION" Solaric, R. (Croatia) and Zvonko G.

"THE PRODUCTION OF ELECTRONIC CHARTS FOR MARINE TRANSPORTATION" Pinheiro, A. (Portugal)

"DEFINITION OF ONE MATHEMATICS MODEL FOR THE ADVANCE MOVEMENT IN HYDROGRAPHIC SURVEYING WORKS OF HIGH PRECISION." Pereda García, R. (Spain), Ferrer Torio, R. and de Luis Ruiz, M.

"MODEL VALIDITY AND DEFINITION FOR THE HEAVE MOVEMENT IN HYDROGRAPHIC SURVEYING WORKS OF HIGH PRECISION." Pereda García, R., Ferrer Torio, R. (Spain) and de Luis Ruiz, M.

"CUSTOMISATION OF A FIELD SURVEY DATABASE USING ArcPad" Martinez, J. (Spain), Bardón, M., Irigoyen, J. and Coll, E.

## **THEME 14 NATIONAL AND REGIONAL ATLAS. ELECTRONIC ATLAS. THEMATIC AND MULTIMEDIA CARTOGRAPHY**

"GAIA, THE COMPREHENSIVE WORLD ATLAS" Harju, E. (Finland), Pekkanen, R., Kostamo, J. and Tarkka, T.

"INTRODUCTION OF MAPPING PROJECT ON THE COUNTY LEVEL IN CHINA WEST" Huang, J. (China), Wang, H., An, Z. And Zhou, R.

"FREEHAND DRAWINGS OVER MULTIMEDIA MAPS ANALYTICAL AND COMMUNICATION TOOL" Denisovich, I. (Germany)

"A STUDY OF RISK IN THE METROPOLITAN AREA OF GUADALAJARA THROUGH THE USE OF DIGITAL ATLAS" Cruz Solís, H. (Mexico), Márquez Azúa, B., Suárez Plascencia, C., Corona Medina, J.P. and Palomar Anguas, M.d.P.

## **THEME 15 VIRTUAL MODELS, VISUALISATION, ANIMATION AND CARTOGRAPHY**

"REVIEW OF SOME VISUAL VARIABLES" Irigoyen, J. (Spain), Coll Aliaga, E. and Martinez, J.

"VIDEOMETRY AS A LOW-COST METHOD FOR MAPPING" Perez, C. (Spain)

"CARTOGRAPHY AS EFFECTIVE AND SUSTAINABLE ACCESS TO CULTURAL TOPICS" Jobst, M. (Austria)

"RECTANGULAR CARTOGRAM COMPUTATION WITH SEA REGIONS" Van Kreveld, M. (The Netherlands) and Speckmann, B.

# Technical Sessions

## Poster Presentations

"HYBRIDS-LOW COST METHODS TO THE DOCUMENTATION OF THE CULTURAL HERITAGE IN CASTILLA Y LEÓN (SPAIN) AND CARTOGRAPHIC POPULARIZATION" Sánchez Martín, N. (Spain), Arias Pérez, B., González Aguilera, D. and Gómez Lahoz, J.

"COGNITIVE MAPPING FOR INTELLIGENT TRANSPORTATION SYSTEMS AND SERVICES" Lopes, J. (Portugal) and Dias, T.

### THEME 16 HISTORY OF CARTOGRAPHY

"THE FUNDAMENTAL CARTOGRAPHIC TECHNOLOGY OF ANCIENT CHINA – FORWARD INTERSECTION" Wang, Z. (China)

"ESTABLISHMENT OF THE STATE MAPPING SERVICE IN UKRAINIAN PEOPLES REPUBLIC (1918-1919)" Sossa, R. (Ukraine)

"THE HISPANIC AND LUSITANIAN PUBLIC MAP COLLECTIONS WORKGROUP" García Miraz, M. d. M. (Spain), Montaner, C. and Isern, C.

"METRIC VALIDATE OF HISTORICAL CARTOGRAPHY. APPLICATION TO SANTANDER BAY AREA (1725-1975)" Ruiz Bedia, M.L. (Spain) and Ferrer Torio, R.

"BLACK VIEW ON HISTORY OF CARTOGRAPHY" Ademola Olufemi, O. (Nigeria)

"GIS HISTORY AND TELECOMMUNICATION" Gbadebo, A. (Nigeria)

### THEME 19 TOURIST CARTOGRAPHY

"MAPPING FOOTSTEPS: HAND DRAWN BIRDS EYE VIEW MAPS AROUND THE WORLD" Holmberg, M. (Canada)

"GREENWAYS INTERACTIVE CARTOGRAPHY: AN INTERNET REVIEW" Rego, T. (Spain), López, A. and Corbelle, E.

"THE ROLE OF MAPS IN THE PROMOTION AND DISSEMINATION OF INFORMATION ON TOURISM IN DELTA STATE, NIGERIA." Olomo, O. (United Kingdom)

"HAMPI – A DREAM IN STONES – ENLIVENED" Ravichandran, V. (India)

### THEME 20 CARTOGRAPHY AND CHILDREN. EDUCATIONAL PRODUCTS

"AN EXPERIENCE IN EDUCATION USING CARTOGRAPHY TO PROMOTE CITIZENSHIP WITH BRAZILIAN PUBLIC HIGH SCHOOL STUDENTS" Goulart Bustamante, A.M. (Brazil) and dos Santos, C.J.B.

"SCHOOL ATLAS OF EDUCATION GEOGRAPHIC AND ENVIRONMENTAL" Brito Rodrigues Frattolillo, A. (Brazil), Rossi, E.C. and Tavares, J.

"THE MAKING OF SCHOOL ATLAS TARGETED TO CHILDREN IN THE FIRST GRADES OF FUNDAMENTAL LEARNING IN THE SCHOOLS OF BRAZIL" Dos Santos, C. J. B. (Brazil) and Kally de Almeida Rex, H.

"DEMANDS ON AN INTERFACE FOR TOUCH-SCREEN BASED APPLICATIONS IN A MUSEUM-LIKE EDUTAINMENT FIELD IN ORDER TO EXEMPLIFY CARTOGRAPHIC ISSUES." Mayrhofer, D. (Austria), Riedl, A. and Wolf, E.

"SURVEY ABOUT EXPERIENCES USING THEMATIC MAPS IN HUNGARIAN ELEMENTARY SCHOOLS" Gallé, E. (Hungary) and Reyes Nuñez, J.J.

"A STUDENT GEOGRAPHIC ATLAS FOR THE NATURAL AND SOCIAL SPACES LEARNING" Martinelli, M. (Brazil)

"THEMATIC CARTOGRAPHY FOR CHILDREN IN PRIMARY SCHOOL OF THE STATE OF RIO DE JANEIRO, BRAZIL" Cigagna, M. (Brazil)

"THE COMPOSITION PART-WHOLE OF THE MUNICIPAL DISTRICT." Iyda Paganelli, T. (Brazil) and Nobre, N.

"SPECIAL NEEDS CARTOGRAPHY FOR CHILDREN AND TEACHERS: AN EVALUATION OF MULTICULTURAL EXPERIENCES IN BRAZIL" Araujo de Almeida (Vasconcellos), R. (Brazil)

"WORKING WITH SCHOOL ATLAS FOR THE ACQUISITION OF GEOGRAPHIC CONCEPTS" Targino, T. (Brazil) and Simielli, M.E.

"THE NEW CARTOGRAPHIC PRODUCTS IN BULGARIA – MODERN SCHOOL ATLASES PRODUCED BY USING MAPINFO" Bandrova, T. (Bulgaria) and Dinev, C.

"CARTOGRAPHIC VISUALIZATION AND THE TEACHING OF GEOGRAPHY" Fernandes Vianna, C.R. (Brazil) and Leal de Menezes, P.M.

### THEME 21 GENDER AND UNDER-REPRESENTED GROUPS AND CARTOGRAPHY

"DEMOGRAPHIC ATLAS OF BORNEO" Becek, K. (Brunei Darussalam)

### THEME 22 MAPS FOR THE BLIND AND VISUALLY IMPAIRED

"CREATION OF TACTILE CARTOGRAPHIC SYMBOLS AS FUNDAMENTAL ELEMENTS IN THE PROCESS OF COMMUNICATION" Pérez de Prada, E. (Chile)

"TACTILE CARTOGRAPHY IN LATIN AMERICA; EVALUATION AND PERSPECTIVES" Coll Escanilla, A. (Chile) and Pino Silva, F.

"SCHOOL «GEOGRAPHICAL ATLAS OF POLAND» FOR THE BLIND AND VISUALLY HANDICAPPED" Polak, M. (Poland) and Krauze-Tomczyk, I.

"TECHNOLOGY OF PRODUCTION OF MAPS DESTINATED FOR THE BLIND AND VISUALLY HANDICAPPED USING VECTOR GRAPHICS ON THE PROTUBERANT PAPER" Karpinska, J. (Poland), Krauze-Tomczyk, I. and Polak, M.

"TACTIL MAPS WITH LARGE PRINT AND COLOURS FOR PEOPLE WITH VISION IMPAIRMENT" García, F. (Spain) and Ruiz, P.

### THEME 23 PLANETARY CARTOGRAPHY

"THE SMALL CELESTIAL BODIES MAPS. THEIR FORMS OF PRESENTATION.THE WAYS OF USE." Nyrtsov, M. (Russia)

"SIMPLIFIED GEOLOGIC MAP OF VENUS FOR THE EDUCATIONAL ATLAS OF PLANETS" Burba, G.A. (Russia)



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"DATA AND METHODOLOGY ON THE GEOMORPHOLOGIC AND STRUCTURAL CARTOGRAPHY OF THE ATLANTIS BASIN REGION, MARS." de Pablo Hdez., M.A. (Spain), Martín González, F. and Márquez González, A.

"A 2 SQUARE METRE TRUE-3D IMAGE MAP OF CHAOTIC TERRAIN, LOWER VALLIS MARINERIS, MARS" Buchroithner, M.F. (Germany), Habermann, K. and Gruendemann, T.

## **THEME 24**

### **RESEARCH AND DEVELOPMENT: NEW PRODUCTS AND CARTOGRAPHIC SYSTEMS**

"PRELIMINARY STUDY ON SPECIFICATION OF BASIC TERRAIN-UNIT DATASET" Wang, H. (China) and Wang, J.

"APIAS – AIRBORNE PHOTOS AND IMAGES ATTAINMENT SYSTEM" Piovesan, E. (Brazil), Cruz da Silveira, G. and Gonçalves Junior, J.C.

"THE PROJECTIVE GEOMETRY APPLIED TO PLANE RECTIFICATION" Arias Pérez, B. (Spain), González Aguilera, D., Gómez Lahoz, J. and Sánchez Martín, N.

"AN INTERFACE OF PERSISTENCE FOR EARTH PHENOMENA AS OBJECT" Lima, J.D. (Brazil)

"INTERACTIVE MAPS" Reznik, T. (Czech Republic)

## **THEME 25**

### **HISTORY OF COLONIAL CARTOGRAPHY IN THE 19TH AND 20TH CENTURIES**

"AUSTRALIA ON THE MAP 1606 - 2006" Scurfield, J. (Australia)

"PIONEER WORK OF GERMAN CARTOGRAPHER MAX MOISEL IN CAMEROON: AN ASSESSMENT OF THE COLONIAL ERA MAPPING CONTRIBUTION" Nghonda, J. P. (Cameroon), Saha, Z. And Tchindjang, M.

## **THEME 26**

### **OTHER THEMES: CARTOGRAPHY AND ADVERTISING, MAPS IN THE MEDIA, CENSUS CARTOGRAPHY, CADASTRAL MAPS, THREE DIMENSIONAL MAPPING, NEW CONCEPTS IN CARTOGRAPHIC SYMBOLY, SPACE AND TIME IN GIS, TOPONYMY.**

"COLOR FOR CAVE MAPS" Irigoyen, J. (Spain), Martinez, J. and Sanz, J.

"THE DESCRIPTION OF HISTORICAL LINKS IN SPATIAL-TEMPORAL DATA MODEL" Kezhong, F. (China), Wan, Q., Li, H. and Lu, F.

"MAKING CARTOGRAPHY AS A FRIENDLY TOOL" Davgun, S.K. (USA)

"DASYMMETRIC MAPPING REVISITED" Liu, X.H. (USA)

"CARTOGRAPHIC RELIEF PRODUCTION STEPS AND PRESENTATION ON MAPS" Ulubay, A. (Turkey)

"A RESEARCH ON SPATIAL DECISION-MAKING FOR E-GOVERNMENT" Liu, J. (China) and Wang, L.

"HISTORICAL-GEOGRAPHICAL AND CARTOGRAPHIC EVOLUTION OF FUNDAO ISLAND – BRAZIL" Leal de Menezes, P.M. (Brazil), Andrade, L., Lepore, V. and Souza, B.

"EFFECT OF SPATIAL SMOOTHING ON MAP USE: A CASE OF FACILITY CHOICE" Nakashima, R. (Japan) and Sadahiro, Y.

"REPRESENTING CYCLIC CHANGES IN POLAR COORDINATE SYSTEMS" Cheng, T. (Hong Kong) and Li, Z.

"ELDERLY POPULATION DISTRIBUTION AND ITS EVOLUTION IN KOREA" Kang, Y.P. (Korea) and Cho, M. H.

"COMPREHENSIVE INDEX METHOD BASED ECOLOGICAL ENVIRONMENT QUALITY COMPREHENSIVE EVALUATION MODEL AND ITS APPLICATION" Li, Y. (China), Zhu, B., Wang, L., Zhao, R.

"USING HEAD-UP DISPLAY FOR VEHICLE NAVIGATION" Harkin, D.M. (Australia), Cartwright, W. and Black, M.

"COLOR HUE AS A VISUAL VARIABLE IN 3D INTERACTIVE MAPS" Moulin Fosse, J. (Brazil), Koenig Veiga, L.A. and Robbi Sluter, C.

"LABEL SHARING AMONG DIGITAL PHOTO COLLECTIONS BASED ON THEIR SPATIAL RELATIONSHIPS" Fujita, H. (Japan) and Arikawa, M.

"SPATIAL DIFFUSION MAPS OF DENGUE FEVER EPIDEMICS OCCURRING IN SOUTH EAST OF BRAZIL: A METHODOLOGY FOR CARTOGRAPHIC MODELLING IN GIS." Ferreira, M.C. (Brazil)

"ERRORS ON METEOROLOGICAL MAPS" Németh, B. (Hungary)

"3D GIS VISUALIZATION OF ARCHAEOLOGICAL EXCAVATION DATA" Tsipidis, S. (Greece), Kousoulakou, A. and Kotsakis, K.

"GISCIENCE «PROSPECTIVE»; CARTOGRAPHY: A CASE APPLICATION STUDY TO THE DOT MAP OF TUNISIA" Dhieb, M. (Tunisia)

"CENSUS MAPPING FOR MARKET RESEARCH AND PRODUCTS ADVERTISEMENT" Zhao, L. (Australia)

"CLASSIFICATION OF URBAN STRUCTURES USING FRACTAL THEORY" Kobori, N. (Japan)

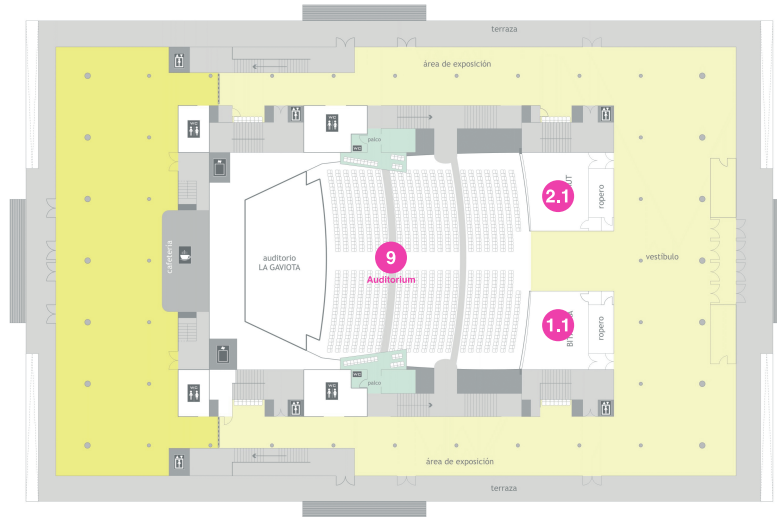
"THE TOPONYMY IN THE NATIONAL TOPOGRAPHIC MAP OF SPAIN, SCALE 1:25 000 (MTN25): TREATMENT OF SUPRA-AUTHONOMOUS AND BILINGUAL GEOGRAPHICAL NAMES." Alcázar González, A. (Spain) and Azcárate Luxán, M.

"ADVERTISING AND CARTOGRAPHY" Cigagna, M. (Brazil)

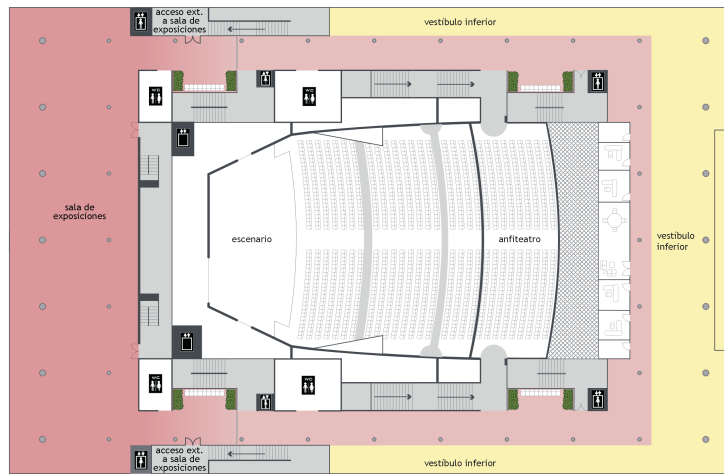
"TIME IN GEOGRAPHIC INFORMATION SYSTEMS" Beser de Deus, L.A. (Brazil) and Coutinho Ferreira da Silva, L.F.

"PARADIGM MAKING AND CARTOGRAPHY, PICTORIAL PRESENTATION OF GEOSPHERE" Ram Kaswan, N. (India)

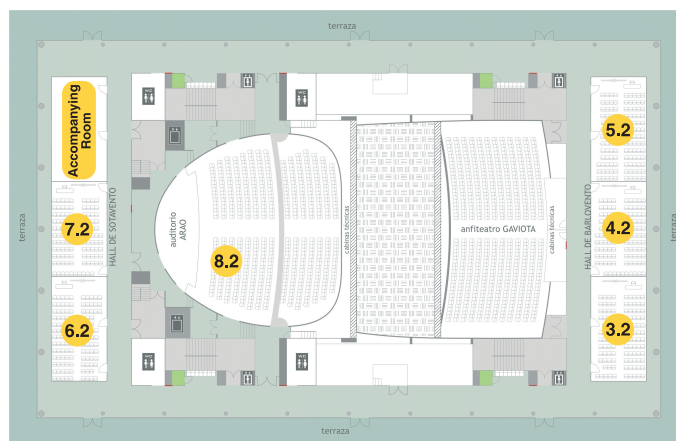
"GIS, GPS AND REMOTE SENSING TECHNIQUES AS A TOOL FOR ESTIMATION DEVELOPMENT OF THE VISTULA RIVER OUTLET" Kowalski, Z. (Poland) and Uscinowicz, S.



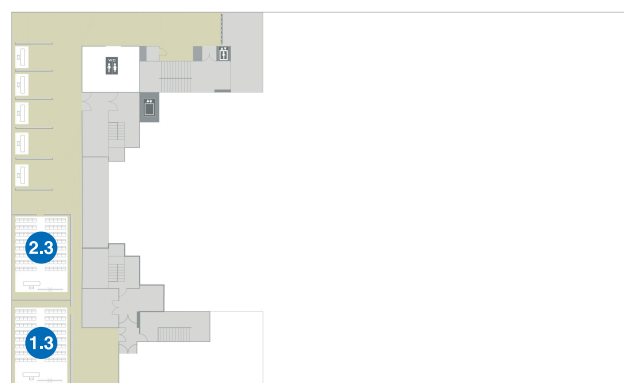
Ground Floor plan



1st Floor plan



2nd Floor plan



3rd Floor plan



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# ICA Commissions and Working Group Meetings

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## SCHEDULE

### Monday 11th

14,00-15,30h ICA Research Commission Chairs Meeting  
(Room 1-3)

16,00-17,30h ICA Research Commission Chairs Meeting  
(Room 1-3)

### Tuesday 12th

09,00-10,30h Uncertainty WG  
(Room 1-3)  
Gender and Cartography.  
(Room 2-3)

11,00-12,30h Marine Cartography.  
(Room 1-3)  
History of Colonial Cartography.  
(Room 2-3)

14,00-15,30h Map Projections.  
(Room 1-3)

16,00-17,30h Management and Economics of Map  
Production  
(Room 2-3)

### Wednesday 13th

09,00-10,30h Spatial Data Quality and Uncertainty.  
(Room 1-3)  
Mapping Africa.  
(Room 2-3)

11,00-12,30h Usability W.G.  
(Room 1-3)  
Generalisation and Multiple  
Representation.  
(Room 2-3)

14,00-15,30h Planetary Cartography.  
(Room 1-3)  
History of Cartography.  
(Room 2-3)

### Thursday 14th

09,00-10,30h Commission Chairs Meeting. (Room 1-3)

11,00-12,30h Visualization and Virtual Environments.  
(Room 1-3)  
Ubiquitous Mapping. (Room 2-3)

14,00-15,30h Incremental Updating and Versioning.  
(Room 1-3)  
Education and Training.  
(Room 2-3)

16,00-17,30h Theoretical Cartography.  
(Room 1-3)

### Friday 15th

09,00-10,30h Mountain Cartography.  
(Room 1-3)  
Geospatial Analysis and Modelling. (Room  
2-3)

11,00-12,30h Cartography and Children.  
(Room 1-3)  
National and Regional Atlases.  
(Room 2-3)

14,00-15,30h Maps and the Internet.  
(Room 1-3)  
Early Warning and Risk Management.  
(Room 2-3)

16,00-17,30h Maps and Graphics for the Blind and  
the Partially Sighted.  
(Room 1-3)  
Mapping and Satellite Imagery.  
(Room 2-3)



# Special Technical Sessions

## July 12th- 14,00-17,30h - Room 8-2

ISO Standar Workshop. Joint ICA Standar Commission and ISO/TC 211 Moderator: Henry Tom, Co-Chair, ISO/TC 211 Advisory Group on Outreach.

*Participants:*

- **International Standardization: An Overview.** Henry Tom, Co-Chair, ISO/TC 211 Advisory Group on Outreach.
- **ICA Commission on Spatial Data Standards.** Harold Mollering, Chair, ICA Commission on Spatial Data Standards.
- **Metadata and related Standards: Overview / Demonstration.** Dave Danko, ISO/TC 211 & OGC.
- **Geography Markup Language (GML): Overview / Demonstration.** Clemens Portele, ISO/TC 211 & OGC.
- **Land Cover Classification System (LCCS): Overview / Demonstration.** John Latham & Antonio Di Gregorio, UN/FAO.

## July 13th- 14,00-17,30h - Room 8-2

Cartography in the SDI changing World.

The role of SDI and cartography in our contemporary world for monitoring and disaster alleviation. Chairmen: Milan Konecny, Ferjan Ormeling: SDI and Cartography: Challenges of Changing World.

*Participants:*

- **Connecting data silos: Ordnance Survey's role in underpinning improved decision-making in Great Britain.** Vanessa Lawrence
- **SDI and Cartography bridging the Gap between Georisks and Geomanagement.** Dietmar Gruenreich
- **SDI and Risk Mapping -INSPIRE challenges and opportunities.** Alessandro Annoni

- **SDI in NATO supporting for Humanitarian Aid Missions.** Pablo Gil
- **The challenges of deepening the development and usage of Geo-Spatial Information in Africa.** Haggai Nyapola
- **Cultural Differences and SDI Development.** Santiago Borrero

## July 14th- 16,00-17,30h - Room 8-2

Aerospace technology and land monitoring

Chairman: Fernando González, Director INTA

*Participants:*

- **ESA satellites support to land monitoring and management** Vicente Gómez Domínguez, Director of the European Spatial Astronomy Centre (ESAC) and the ESA delegate in Spain.
- **Observation satellites for crisis management.** Fernando Davara Rodríguez, expert in geospatial systems and independent international analyst.
- **INTA airborne remote sensing high resolution activities.** M<sup>a</sup> Jesús Gutiérrez de la Cámara, Director of the INTA Earth Observation, Remote sensing and Atmosphere Department.
- **Mapping and land management: Field campaigns in Spain and South America.** Jaume Miranda i Canals, Director of the Institut Cartogràfic de Catalunya.

## July 14th- 17,30-18,30h - Room 8-2

- **International Space Station as a tool of science.** Pedro Duque, Spanish astronaut from European Space Agency (ESA).

## July 15th- 14,00-17,30h - Room 8-2 SESSION ONE (14,00-15,30) European navigation systems from the industrial perspective

Presentation of the Table: Mercedes Sierra. Director of Space Programmes of the Spanish Centre for the Development of Industrial Technology.

**An Industrial View. Speakers:**

- **The Galileo and EGNOS programs** R. Lucas, Head of the User Services and Applications Area, ESA
- **Galileo and EGNOS: European contribution to satellite navigations systems.** John Swan, Technical Division, Galileo Joint Undertaking
- **Industrial architecture and challenges of the Galileo Program** Alexander Mager, Vice President, Galileo Industries
- **Participation of Spanish industry in Galileo.** J. Borrero, General Director, Galileo Systems and Services

SESIÓN TWO (16,00-17,30)  
European navigation systems from the user's perspective  
Presentation of the Table: Pablo Vázquez. Director of the Prospective Division and Transportation Studies of the Ministry for Development.

**An institutional View. Speakers:**

- **Future markets for GNSS systems.** Pedro Pedreira. Executive Director of the Galileo Supervising Authority.
- **Technical support for marketing GNSS system: the EGNOS system.** M<sup>a</sup> Luz de Mateo. Head, AENA GNSS System Development Department.
- **A specific application. Road transport of merchandises.** Carlos Pascual. General Secretary of the International Association for Transport of Goods by Road (ASTIC).



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# Workshops, Tutorials and Courses

## Provisional list of workshops, tutorials and courses in ICC 2005

<i>Date</i>	<i>Event</i>	<i>Site</i>
7th-8th July	Workshop on Generalitaton and Multiple Representation.	A Coruña
6th-7th July	Joint ICA Commissions Seminar on Teaching Map Use through Internet.	Madrid.
8th-10th July	6th Joint ICA/ISPRS/EuroGraphics Workshop on Incremental Updating and Versioning of Spatial Data Bases.	A Coruña
10th July	Tutorial on Generalitaton and Multiple Representation.	A Coruña
6th-8th July	Cartography with ArcGIS. Esri Course.	Santiago



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# Social Programme

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## Welcome Reception

Day: 11 July/2005

Place: Conference and Exhibition Centre (PALEXCO).

Hour: 18,00h

Welcome Reception is included in the total amount for the registration in the Conference. If you have not registered, please do it in the ICC 2005 Technical Secretary (Congress Center).



## EXHIBITOR'S RECEPTION.

Day: 12 July/2005

Place: Conference and Exhibition Centre (PALEXCO).

Hour: 18,00h

Exhibitors' Reception is included in the total amount of the registration in the Conference. If you have not registered, please do it in the ICC 2005 Technical Secretary (Congress Center).

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## GALICIAN FIESTA

Day: 13 July/2005

Price per person: 45,00€

Pickup from hotels at 19,30h. Galician Fiesta will be offered in the gardens of the "Pazo das Torres" nearby the city and with good connections. In the Galician Fiesta, you will have the opportunity of tasting different typical gastronomic products from Galicia, everything livened up by several folk bands which will perform traditional music and dances from Galicia, in an incomparable environment.

The "Pazo das Torres" dates from the XVII. It was handed over to the Council of Oleiros in 1989. It has a small theatre, a library and the Museum "Os Oleiros", one of the biggest European collections of traditional pottery. This is a more than 5000m<sup>2</sup> property, with a garden where a hundred-year-old Ombu stands out.







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# Technical Tours

## Galician Supercomputerizing Centre (CESGA) - Santiago de Compostela

*Departures:* Mornings 09.00 a.m. (Palexco).

*Days:* 14-15 July/2005

*Price per person:* 49,00 Euros.

Collection at conferences and exhibitions centre (Palexco) and departure to **Santiago de Compostela** for a technical visit to the **CESGA**. Depending on the length of the visit, our guides will offer a tour of the old town of Santiago before lunch. On completion, return to A Coruña.



## Historic Archive of Galicia

*Departures:* Mornings 09.00 a.m. (Palexco).

*Days:* 12-13 July/2005

*Price per person:* 16,00 Euros.

Collection at conferences and exhibitions centre (Palexco) for trip to the **Historic Archive of Galicia**. Followed by a guided tour to the **'Tower of Hercules'**, the only working Roman lighthouse in the world, and an international symbol of the city, or to the **Archaeological Museum of the Castle of San Antón**, once a fortress and prison, where we may explore remains of the prehistoric culture of our city. On completion, return to A Coruña (Palexco).



## Maritime Control Centre

*Departures:* Mornings 09.00 a.m. (Palexco).

*Days:* 14-15 July/2005

*Price per person:* 49,00 Euros

Collection at conferences and exhibitions centre (Palexco) for trip to the **Maritime Control Centre** (Finisterre). On completion, and depending on the length of the visit, we will make a guided tour in and around the estuary of **Muros-Noya**, where we will have lunch. Later, we will return to A Coruña (Palexco).



# Social Activities

Technical Tours  
Congress Tours

## Congress Tours

### Panorama of A Coruña

*Departures:* Mornings 10.00 a.m. (Palexco).

*Days:* 11 July/2005

*Price per person:* 16,00 Euros

Collection at conferences and exhibitions centre (Palexco). A panoramic tour to explore the city and the surrounding area. We will visit the new part of the city with its seafront promenade. It is a cultural walk set in a natural environment, with a series of cultural and tourist attractions built over the last decade: sculptures, the nature area around the peninsula where the Tower is situated, the 'Casa del Hombre' or 'Domus', the 'Casa de los Peces' or city aquarium (admission included in price), the Millennium Obelisk, etc, apart from earlier structures, such as the ancient Tower of Hercules. We will also visit the old town, with historical monuments dating from before the nineteenth century, as well as others built more recently, such as military installations and manor houses of the nobility of A Coruña (Palexco).



### Santiago de Compostela (whole day)

*Departures:* Mornings 09.30 a.m. (Palexco).

*Days:* 12 July/2005

*Price per person:* 49,00 Euros.

Collection at conferences and exhibitions centre (Palexco). Visit to this monumental city, built over the centuries around the tomb of the apostle St. James the Elder, giving rise to some of the most splendid and harmonious architectural ensembles in the whole world. Considered one of the three spiritual capitals of Christianity together with Rome and Jerusalem, which through pilgrimages from all over the continent along the Way of St. James led, in the words of Goethe, to the creation of the idea of Europe. Compostela spread its creations throughout Europe in the same way as different cultural manifestations found their reflection in the city itself. We will visit the most emblematic areas of the city: the Obradoiro and Quintana squares, the Cathedral, etc., all of which will be explained in detail by our guides. After lunch, free afternoon and return. to A Coruña (Palexco).





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### Finisterre (whole day)

*Departures:* Mornings 09.30 a.m. (Palexco).

*Days:* 14 July/2005

*Price per person:* 49,00 Euros

Collection at conferences and exhibitions centre (Palexco). Towards Finisterre (the famous Roman Finisterrae where the known world ended) and flanking the coast of A Coruña, we find a spectacular coastline with small fishing villages with a long seafaring history, that has given rise to mysterious tales and enigmatic legends. The numerous tragedies and shipwrecks that have taken place here gave it its name, the 'Coast of Death'. Our guides will offer full details of all of the features of the area. After lunch in a coastal town, we will return via the inland route. Later, we will return to A Coruña (Palexco).



### Sil Canyon

*Departures:* Mornings 07.30 a.m. (Palexco).

*Days:* 15 July/2005

*Price per person:* 53,00 Euros

Collection at conferences and exhibitions centre (Palexco). In the 'Ribeira Sacra' or 'Holy Shores' we find monumental elements combined with spectacular scenery, both sublime and overwhelming, produced by man and nature alike. A wealth of emotions in a physical space that is truly breathtaking. The intimate nature of the Ribeira Sacra is offset by the spectacular canyons of the Sil River, with hundreds of glorious and extensive panoramas. We will leave our hotels towards Ourense. We will visit the monastery of San Estevo, then board a pleasure boat to navigate through the canyons of the Sil River. We will stop off to visit the castle of Castro Caldelas. After lunch, we will return to A Coruña (Palexco).





# Orienteering Event

## Orienteering Event - Hercules Tower

### Programme

Thursday 14th 2005

Total amount: 10 Euros.

17:30 Departure by bus from PALEXCO.

18:00 Arrival to the starting line area.

18:30 Start of the first participant.

19:30 Departure of bus number 1 to PALEXCO.

20:00 Closure of the finishing line and departure of bus number 2 to PALEXCO.

### Location

The map is located at the Hercules Tower Peninsula, an emblematic place of the city of A Coruña, where the history of this city begins.

### Map

Map according to regulations ISSOM 2004. Made in April 2005 by Óscar Freire (SPAIN) and Paco Cobas (SPAIN).

Urban map with half-urban areas, surrounded by the sea in the East and in the West, with cliffs which, in some cases, finish in small beaches and creeks. Areas with streets among buildings combine with wide areas of open land, little areas scattered of low and impenetrable vegetation. It has technical areas with lots of rocks and small details in the relief. Average differences in height. Suitable for all levels of orienteering, from the most basic to the most advanced.



### Route

Classic daily route, suitable for the general public.

### Recommendations

We advise you to bring your own compass, though it is not essential considering the references present almost all over the map.

Shorts or orienteering suit and trainers will be enough for the route.





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# Social Activities

## Post Congress Tours

## Post Congress Tours

### Portugal

*Stay of:* 5 Days/4 Nights.

*Dates:* 17 to 22 July

*Price per person:* 563,00 Euros. Double room.

#### 5th / 17th July - A CORUÑA - OPORTO.

Pickup from hotels early and departure for Oporto. Lunch on the way. Arrival, Dinner and accommodation.

#### 6th / 18th July - OPORTO.

Breakfast and visit to city (mouth of the river Duero, Carmen church, Torre dos Clerigos, etc.). We will also visit one of the city's famous wine cellars. Return to hotel, dinner and accommodation.

#### 7th / 19th July - OPORTO - BATALHA - FATIMA - LISBON.

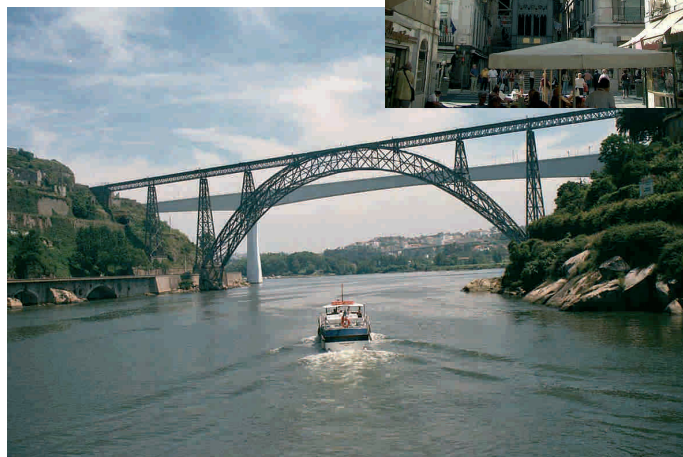
Breakfast and departure to Lisbon. On the way we will visit Batalha and Fatima and see the Chapel of the Visions and the Basilica. Lunch. Journey and arrival in Lisbon. Dinner and accommodation.

#### 8th / 20th July - LISBON.

Breakfast. Guided tour in the morning around the city to visit its most famous places and monuments (Torre de Belem, Alfama district, discovery monuments, etc.). Rest of the day free to enjoy the city. Dinner and accommodation.

#### 9th / 21st July - LISBON - A CORUÑA.

Breakfast and departure to A Coruña. Lunch on the way. Arrival and return to the different hotels.



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## IMPORTANT NOTE

IF YOU HAVE PROCESSED YOUR BOOKING FOR HOTEL DIRECTLY WITH THE HOTEL AND NOT WITH THE MEDIATION OF THE ICC 2005 ORGANIZATION OR YOU HAVE MADE THE BOOKING DIRECTLY WITH A HOTEL NOT SELECTED BY THE ORGANIZATION.

AND IF YOU WANT TO REGISTER OR YOU HAVE REGISTERED FOR THE GALA DINNER OR THE GALICIAN FIESTA, PLEASE INFORM THE ICC 2005 TECHNICAL SECRETARY FROM WHICH HOTEL, OF ALL THE ONES SHOWN BELOW, YOU WANT TO BE PICKED UP.

ON THE CONTRARY, WE WILL NOT BE ABLE TO PICK YOU UP BECAUSE OF OUR NOT KNOWING THE HOTEL YOU ARE STAYING AT, AND THE ORGANIZATION WILL NOT BE RESPONSIBLE FOR ANY KIND OF INCONVENIENCES AND EXPENSES CAUSED BY YOUR OWN TRANSFER. REFUND OF THE BOOKING WILL NOT BE MADE.

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- MELIA MARIA PITA.
- NH ATLANTICO.
- TRYP CORUNA.
- HESPERIA CORUÑA.
- AC CORUÑA.
- BARCELO CORUÑA.
- ZENIT CORUÑA.
- CIUDAD DE A CORUÑA.
- RIAZOR.
- PLAZA.
- ESPAÑA.
- RESIDENCIA RIALTA.
- RESIDENCIA SIGLO XXI.



HANDLE IN AT THE TECHNICAL SECRETARY IN THE CONFERENCE CENTRE

FAMILY NAME:

NAME:

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.....GALICIAN FIESTA.

.....GALA DINNER.





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