



"GeoSUR develops geographic services on a free-access web platform"

## The Editor's Note

This edition presents different approaches to regional cooperation in the production and dissemination of Geographic Information (GI). New risks and the role of national mapping agencies in the context of free data, as well as the various characters of regional / global cooperation are highlighted in the interview of the month. In the same vein, in the permanent columns are emphasized the "convergence of policies, practices and processes" as a framework for: the organizations of the Americas' shared Plan to the acceleration of SDIs; the recent joint meeting between the global and the SDI in Europe; the implementation of GI as demonstrated in thematic

meetings of the Americas; and the evaluation requirements of the Pan-American Agenda promoted during meetings of PAIGH's Authorities and Commissions in June.

GeoSUR newsletter seeks to disseminate GeoSUR Program's achievements and characteristics as well as events, projects and best practices for the application of GI into sustainable development and decision making in the region, as part of the Geospatial Data Infrastructure of the Americas. The Portuguese translation is performed by **Eduardo Freitas**, Manager of the GEOeduc Institute of Brazil. Please send your contributions and suggestions to: **Nancy Aguirre**, Editor of GeoSUR Newsletter, at [cnaguirre@ipagh.org](mailto:cnaguirre@ipagh.org).

## Inside this Issue:

- The interview this month is with Cesar Rodriguez, Director of the Military Geographic Service of Uruguay.
- Santiago Borrero, from GeoSUR's Program coordination, refers to the Geospatial World Forum and the INSPIRE Conference 2015.
- The General Secretariat of the PAIGH comments on the Second Ministerial Meeting of the Energy and Climate Partnership of the Americas, and the PAIGH's 83 Meeting of Authorities and 3rd Joint Technical Meeting of the Commissions.

## The rule is collaboration between national and regional initiatives, underlines Cesar Rodriguez, Director of the Military Geographic Service of Uruguay



Cesar Rodriguez, is Director of the Military Geographic Service (SGM) of Uruguay, and holds a degree in Military Sciences with a Major State Diploma. A Military-geographic engineer, he also holds a graduate degree and a Master degree in Business Administration (MBA) from the Catholic University of Uruguay

You have had the opportunity to work with continuity in the management of the Service so that you are now one of the directors of a geographic institution with more experience in the region and the PAIGH; in this context, let's make an account:

### **How the fundamental databases have developed in Uruguay in recent years and what is projected in the medium term?**

The Military Geographic Service (in Spanish SGM) of Uruguay since its inception in 1913 has developed an essentially technical activity as a Geographic Information (GI) producer, which has been of major importance in every kind of productive development and for the requirements of public and private organizations. Within this frame the production and publication of analog (printed), digital base maps, and special maps are stressed, and have included: The Population-Centers National Cartographic Plan at scale of

1:10,000 (CPN-CP10); the Department of Montevideo Cartographic Plan at scale of 1:20,000 (PCD-MVD20); the National Cartographic Plans at scales of 1:50,000 (PCN50), 1:100,000 (PCN100), 1:250,000 (PCD250), 1:500,000 (PCN500), and 1:750,000 (PCN750); the maritime mapping -produced by the Navy of Uruguay-, and the aeronautical mapping. Still, with 5% of progress to date, is the National Cartographic Plan at scale of 1:25,000 (PCN 25).

In turn, the National Geodetic Networks are developed, implemented and maintained by the SGM, in compliance with one of its fundamental missions. They comprise the Official-National Geodetic Reference Framework. The passive network is operational with more than 2,800 monuments of first, second, and third order; to which we must add leveling networks (4,250), and gravimetric works. Likewise, there is an active continuous-online reference network with 22 stations.



Military Geographic Service (SGM),  
Uruguay



Spatial Data Infrastructure of  
Uruguay (IDEuy)

*"...the Government determined that digital Geographic Information (GI) produced by the SGM should be freely delivered for governmental agencies demanding it."*

*"The Spatial Data Infrastructure of Uruguay (IDEuy) became a decentralized body with technical autonomy, dependent on the Presidency of the Republic."*

## The rule is collaboration... continues

The abovementioned products were developed with own funds assuming their payback by cartography-selling. But from year 2008, national budget financial resources are directly assigned to SGM to meeting GI production.

In return, the Government determined that digital Geographic Information (GI) produced by the SGM should be freely delivered for governmental agencies demanding it. This meant for the SGM **a paradigm shift in its business model**, with a high impact on its organizational culture.

The new model required actions to optimizing management of human, material, technological, financial and time resources, and also contributed to developing a proactive attitude at different levels of the organization, thus substantially improving internal and external communication.

Now, the progress we aim at, as well as the medium-term challenge is the development of 1:25,000 scale mapping. This is recommended for national level management and decision making, and particularly for evolving productive-purpose blueprints, and infrastructure expansion; the above based on this scale's balance between its detail and associated implementation costs.

Project beneficiaries, besides the Ministry of Defense itself, are state agencies (such as other Ministries, State enterprises, Intendancies, Municipalities, National Cadastre, others); the National Emergency System; universities and other training and research centers; agribusiness, and forestry, mining, logistics, and construction companies, among others; and professional, scientific and technical people on areas of surveying, topography, geodesy, photogrammetry, geophysics, geology,

agronomy, geography, cartography, remote sensing, and so on. Phases for the project implementation include: **Phase 0**, on densification of the Passive National Geodetic Network (REGNP-ROU); **Phase 1**, where field Control Points for production and quality control are relieved. This phase goes together with **a digital-aerial photographic survey of the national territory**, an essential input for the project progress; during **Phases 2, 3, 4 and 5** (development and implementation) the works on data capture and database storage (of geographic objects) will be accomplished.

In turn, the produced Base Maps (in Spanish BCN) will be delivered to society through Internet; and through **Phase 6**, the output of each of the PCN25 products are converted into digital and analog (printed) formats. The one-time investment needs are for US\$1,500,000.

### **How the Spatial Data Infrastructure of Uruguay is now and what are its main achievements?**

In a process that started late last century, mistrust and difficulties were surpassed while state actors were convinced on the interest of formalizing an SDI. There were several stages on this respect; we already noted the decision to change SGM's business model through directly funding its activities.

In 2010 a new stage was organized under the coordination of AGESIC (Agency for Electronic Government and Information and Knowledge Society), culminating in the passage of SDI to the orbit of the Presidency from January 1, 2014, according to Law No. 19.149.

The Spatial Data Infrastructure of Uruguay (IDEuy) became a decentralized body with technical autonomy, dependent on the Presidency of the Republic.

## The rule is collaboration... continues



WMS Services of the SGM, Uruguay

***"(IDEuy)... is an organization that brings together GI producers and users -strictly at public level as SGM is. It is chaired by a Board of Directors and has an Honorary National Geographic Information Council (in Spanish CNHIG), with working groups being developed."***

***"...the so-called "cartography democratization" pushes to reshape the way we think and do things, to taking greater account and incorporation of users' views and contributions in the context of Web 2.0, and to reengineering business models in the context of gratuitousness-economy and long tail dynamics."***

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After various studies and assessments it has been concluded that there is a strong demand for updated and standardized GI by different institutions and state and private organizations.

Based on successive diagnoses it was considered appropriate to perform an aerial photographic-survey of the entire national territory and / or to acquire satellite images; the latter as an alternative or complementary source suitable for mapping production at scale of 1:25,000 overall and at 1:5,000 in urban and suburban areas.

### **What is your assessment of the contribution and the current state of regional initiatives such as the UN-GGIM Committee, SIRGAS, and GeoSUR?**

The development provided by technology to GI production is remarkable and significant. The fact that the United Nations through UN-GGIM grants a related umbrella will not only make it more visible but also will likely provide it with greater dynamism.

While there have been personal contacts and participation in associated events, these has not yet affected the Uruguayan reality. Its greatest contribution is yet to be realized, and could include: statistics closely linked with geographical information; and making explicit recommendations from the United Nations concerning the regular updating of cartography, such as at the time of the census.

Referring to SIRGAS, Uruguay has been closely involved with the project since its inception, and is an active participant at the extent possible. From the point of view of Uruguay, SIRGAS can be considered a success to replicate in both its technical and political / institutional aspects, as it puts at the same table both the academy and the productive sector -public and private.

The GeoSUR Program is coordinated by CAF- development bank of Latin America-, and the PAIGH.

The first question arising is: What else has Uruguay used of GeoSUR? In early times, the training provided was a major driver for the development of map services through the web. However, perhaps due to Uruguay's (intermediate) development level this support lost momentum. But support of this program is relevant to the SGM in its role as Official Mapping Agency.

It would be interesting to see a more committed GeoSUR with National Mapping Agencies. Their role and commitment as guarantor authorities for geographic data existence and availability are forcing them to taking new risks and defining new ways.

In addition, the so-called "cartography democratization" pushes to reshape the way we think and do things, to taking greater account and incorporation of users' views and contributions in the context of Web 2.0, and to reengineering business models in the context of gratuitousness-economy and long tail dynamics.

Moreover, the struggle for budgets to producing GI is a daily bread. It is necessary to collect objective and verifiable arguments to justify a greater attention in this very specific infrastructure.



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## The rule is collaboration... continues

It is therefore essential to have cost-benefit studies that provide strong arguments when considering resource needs.

Finally, the current context is marked, among other factors, by the inherent globalization in information and communication digitalization, a very different scenario than that which gave birth to the PAIGH in 1928 -a specialized agency of the Organization of American States (OAS). Today the OAS is no longer configured as the only organization that articulates interests of the American countries to foster

cooperation; indeed acronyms describing a more complex scenario abound: CELAC, UNASUR, MERCOSUR, NAFTA, SICA, CARICOM, ALADI, etc.

Why the abovementioned? Well, one challenge is to avoid effort and resource duplication. Strategic planning is substantive given the cross-cutting themes for a relevant role-assignment. The rule is collaboration, and this is where the PAIGH’s role as facilitator is important. The United Nations prestige forms the binding glue, while financing through the CAF is a needed support to making required investments and training.

## What is said from the Coordination of GeoSUR?

By Santiago Borrero

### Convergence of policies, practices and processes

Under this topic, the World Geospatial Forum and the INSPIRE Conference 2015 gathered in Lisbon, Portugal, on May 25-29. The idea and purpose about convergence are necessary and have been there for a good time. An approach to the matter in our region is the "Joint Plan for the Acceleration of Spatial Data Infrastructure" a policy document and agreed action between the PAIGH, SIRGAS, UN-GGIM/A, and GeoSUR.

How much progress has been made? I prefer to leave the answer to the community of specialists. While the Global Forum achieved several of its goals, there is the feeling that the novel idea of the joint meeting between the global and the European SDI pushed INSPIRE a little (or a lot?) of the increased efficiency that was observed in their previous meetings. In addition, in the plenary sessions several cases were noted where the commercial was

confused with institutional presentations. We'll see if the two events will join together again in the future.

Of course sessions devoted to presenting the state of INSPIRE, the implementation process and its projection were, as always, very interesting (i.e. the Oskari Platform); as well as the inclusion of new trends: the sessions devoted to learn on good SDI practices; those devoted to climate change, UAVs or drones; Big Data and smart cities, are confirming this appreciation.

This is the case of the presentation of Glasgow as a sustainable ecosystem: <http://geospatialworld.net/Paper/technology/ArticleView.aspx?aid=31563>

The report and conference presentations may be found at: <http://geospatialworldforum.org/proceedings.html>



Santiago Borrero, GeoSUR Program Coordinator

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## From the PAIGH's Secretary General

By Rodrigo Barriga

Dear readers of the Newsletter, we are pleased to share with you our latest activities.

First, the participation as panelist to the Second Ministerial Meeting of the Energy and Climate Partnership of the Americas (ECPA), held in Merida, Mexico.

At this event the importance of geospatial information was analyzed as a key element in various applications that allow a better understanding of the sources of energy, especially renewable, for its multiple benefits to minimizing the effects of climate change.

In this opportunity it was recalled that the initiative on "National Inventory of Renewable Energy (in Spanish INERE)" of Mexico, won an honorable mention in the 2014 GeoSUR Award, an example that could be replicated in the Latin American region.

The 83rd Meeting of Authorities and the 3rd Joint Technical Meeting of the Commissions of PAIGH were held between June 14 and 19, as an opportunity to discuss the Institute's progress.

Issues of great importance were discussed, such as the comprehensive analysis of the Pan American Agenda, especially in terms of making some adjustments to projecting it as a strategic planning tool towards the Institute's Centenary.

These adjustments consider the inclusion of heritage as one of the new subjects for study, as well as the reinforcement of concepts relevant to the analysis of natural hazards, land management, and adaptation to climate change.

Other important issue was the analysis of the Joint Action Plan signed between the PAIGH, SIRGAS. UN-GGIM: Americas, and GeoSUR; the Cartography Commission is adapting and projecting it for the coming years as an effective coordination and regional cooperation tool.

In addition, a series of workshops took place; most notably on the procedures for project formulation, and on writing scientific articles, which were undertaken in accordance with the momentum that is taking place through the Working Group of Editors to include our periodical publications into highest scientific indexes.

Another significant workshop was led by the CNIG of Spain on the harmonization of ISO TC / 211 terms for R3IGeo as to develop the Pan-Hispanic Glossary to be soon available.

The 3rd Joint Technical Meeting was attended by 161 persons, including representatives from nearly all member countries of the Institute.

Pertinent results have allowed making necessary adjustments in the work program of each of the Commissions.

But without doubt, better working relationships based on cooperation and Pan-American fraternity were obtained; these will ultimately help improving life quality of people living in the continent by way of the Institute's activities.



Rodrigo Barriga, Secretary General of the PAIGH, and Patricia Galeana, President of the Commission of History in the 3rd Joint Technical Meeting of the Commissions of the PAIGH (Mexico, 2015)



Attendees to the 3rd Joint Technical Meeting of the Commissions of the PAIGH (Mexico, 2015)

***"The 3rd Joint Technical Meeting was attended by 161 persons, including representatives from nearly all member countries of the Institute. Pertinent results have allowed making necessary adjustments in the work program of each of the Commissions."***

## Novelties in GeoSUR Portal

### Objectives of GeoSUR Action Plan 2015-2017

GeoSUR born in 2007 with financial support of the CAF and a joint coordination with the Pan American Institute of Geography and History (PAIGH), aimed at making available geospatial information, spatial data and applications, to users in the Americas thus contributing to overall development.

The Program enabled activation of a unique network of regional operational spatial information in developing countries, comparable to the network developed by INSPIRE in Europe, and today has over 100 participating institutions.

The experience accumulated by the CAF through GeoSUR may be used by other development banks and integration mechanisms in other regions in order to place geographic information for development purposes.

Now, the Action Plan 2015-2017 has been drafted aimed at both consolidating the program and to projecting a new stage in the CAF. At the end of this cycle GeoSUR will have achieved a decade of continuous operation.

The Plan includes ten goals:

1. Strengthening technical components characterizing GeoSUR
2. Optimizing the Program's relationship with users
3. Addressing issues of limited fundamental data in the member countries of CAF
4. Running key projects to undertake a new stage in GeoSUR
5. Promoting the use of GeoSUR inside CAF
6. Enabling prospective aspects essential for consolidating and furthering GeoSUR's development
7. Improving relationships with participating entities
8. Projecting strategic partnerships to GeoSUR
9. Increasing GeoSUR's visibility
10. Underpinning the human and financial resources required by GeoSUR

This Plan targets GeoSUR consolidation as a regional public good and a network of geographic information services for all American countries, and at promoting the Information Society in Latin America.



### GeoSUR Program: Basic Figures

Years in Operation	8
Participating Institutions	110
Beneficiary Countries	26
GeoSUR Network Specialists	550
Officials Trained (6 Regional Workshops)	314
CAF Officials Trained	130
Virtual Workshops Offered	41
Available Digital Maps	20,000
Available Metadata	14,000
Map Services (WMS)	310
WFS Services	25

Webpage: <http://www.geosur.info>



## How to discover and visualize GeoSUR data?

By Claudia J Young, GIS Specialist / Software Engineering, Innovate, Inc., Contractor to USGS EROS Center (of the USGS technical group for GeoSUR)

In this opportunity we include the example of mangroves, a recently added layer to the website and a research result published in 2011. The authors claim to present "the most comprehensive, globally consistent and highest resolution (30m) global mangrove database ever created" to the date.

[Data Source: Giri, C., et al. "Status and distribution of mangrove forests of the world using earth observation satellite data." *Global Ecology and Biogeography* 20, no. 1 (2011): 154-159]

There are different ways in GeoSUR to access the mangroves information (1) visualize the data from the GeoSUR **Regional Map Viewer** as a map service, (2) discover the data through the **Geoportal** to get metadata information, and (3) access the data from the **Available Data** page to download the data.

### 1. From the Regional Map Viewer

- a. To access the GeoSUR map viewer, go to <http://www.geosur.info>, and click on the **Regional Map Viewer** (Figure 1a).
- b. A new window will open the map viewer. From this viewer, click on **Map Layers** (Figure 2a), scroll down in the list and look for **Mangroves** (Figure 2b). Then, click on the checkbox to activate the layer (Figure 2).
- c. With the default base map, you may not see the layer, but you could change the base map to **Imagery** (Figure 3a) and then use the zoom in tool to get a closer look. The mangroves map is classified by region. The classification (Figure 3b) can be viewed from the **Legend** tool (Figure 3c).
- d. The map viewer provides different GIS tools that can be used to query information. For example, use the **Identify** tool (Figure 3d) to get more detailed information on mangroves in an area of interest.



Figure 1. GeoSUR Main Site with the (a) Regional Map Viewer link location



Figure 2. GeoSUR RMS viewer with (a) Map Layers showing the (b) Mangroves map selected

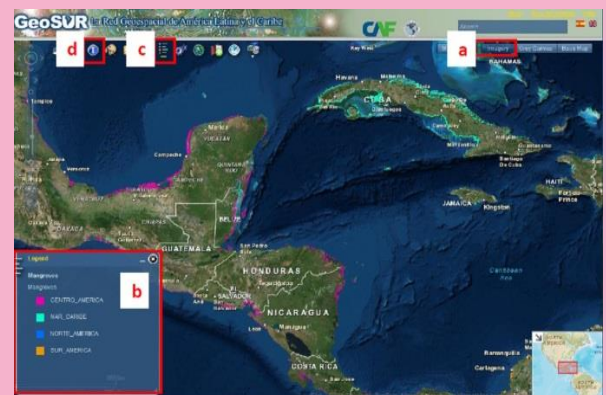


Figure 3. Mangroves map displayed using the (a) Imagery base map with the legend information (b) from the Legend tool (c)

## How to discover and visualize... continues

### 2. From Geoportals

GeoSUR also provides a search tool to discover datasets through a metadata searcher from the different map services in the project. The Geoportals is an open source product that enables discovery and use of geospatial resources including datasets, rasters, and Web services.

To find mangroves information, go to <http://www.geosur.info>, and click on **Search for Data** (Figure 4a). This will show the Geoportals search form. In the text field type "mangroves" and click on **Search** (Figure 4b). For this case, the results shows one record, which is a WMS service (Figure 4c). Click on the result to show the metadata and options to get more information about the mangroves map service.

### 3. From the Available Data page

The mangroves is one of the GeoSUR datasets available to download. To do this, go to <http://www.geosur.info>, and click on the **Available Data** option in the GeoSUR Program left side menu (Figure 5a). This section shows a list of the main datasets available to download. From the list, click on **+ Mangroves** (Figure 5b). This will show the available information that includes:

The metadata for GeoSUR users



and the link to download the dataset



The mangroves zip file contains a shapefile dataset, which can be used in a GIS software (e.g. ArcGIS, QGIS, etc.) to visualize or do analysis, and a HTML metadata file with the dataset documentation.

In general, the available download datasets in the GeoSUR page can be raster or shapefiles datasets, so users will need to use a GIS software.

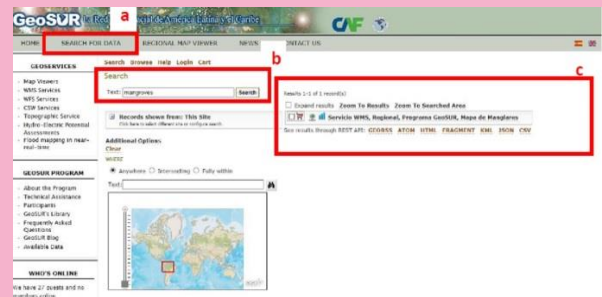


Figure 4. Metadata search from GeoSUR site with (a) link to access this service, (b) the search text to find the mangrove metadata information and (c) results from this search



Figure 5. GeoSUR Available Data page with (a) location of the link to this page and (b) location of the mangroves metadata and data available to download



## Other events in the region

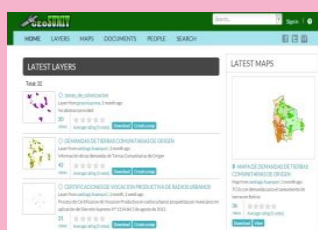
### INTERMEDIATE MIAN PROJECT WORKSHOP

An intermediate Workshop on the project "Integrated Northern Andean Countries Map" (in Spanish MIAN) was successfully held in April in the premises of the Military Geographic Institute (in Spanish IGM) of Peru in Lima, with participation of delegates from the Military Geographic Institutes of Peru and Bolivia as well as Antonio F Rodriguez from CNIG (Geographic Information National Center), Spain acting as technical support. The event focused on integrating the IGM of Bolivia into MIAN project, consolidating its multinational technical team, and reviewing general decisions, in addition to posing, solving and planning its geometry integration. It was concluded that completion of data harmonization and integration between Peru and Bolivia is feasible according to the work program. This intermediate workshop will strengthen the scheduled actions for upcoming workshops to be held in July in Ecuador and in November in Panama.

[Source: Antonio F. Rodriguez, Deputy Assistant Director of the CNIG, Spain by way of Elizabeth Samuels, National Geographic Institute "Tommy Guardia" ANATI, Panama].

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*"The Single Land Information System (in Spanish SUNIT) of Bolivia, under the Vice Ministry of Lands, is now integrated into GeoSur Program."*



Single Land Information System (in Spanish SUNIT) Portal (GeoSUNIT), Bolivia

### SUNIT NOW INTEGRATED TO GEOSUR PROGRAM

The Single Land Information System (in Spanish SUNIT) of Bolivia, under the Vice Ministry of Lands, is now integrated into GeoSur Program. Likewise, the National Integrated Information System for Risk Management (in Spanish SINAGER) of the Vice Ministry of Civil Defense is implementing a thematic SDI node on Risk Management (GeoSINAGER), which is also incorporated into GeoSUR. On the other hand, the Agency for Development of Macro-Regions and Border Areas (in Spanish ADEMAF), is also conducting an SDI (GeoADEMAF), which will be presented to the public in July this year.

[Source: Santos Luis Quispe Choque, GeoSINAGER, Bolivia by way of Santiago Borrero]

### BRAZIL: DRONESHOW 2015

The DroneShow 2015 is the 1st Drones Fair in Brazil and will take place on October 28-29 in São Paulo. In addition to the exhibition space, various training opportunities (and for insight into this technology) will be developed. All information about the event as well as news and updates on the world of drones, and instructions on how to register, may be found in the recently launched website: [www.droneshowla.com](http://www.droneshowla.com). You may also log on to DroneShow News on Facebook at: [www.facebook.com/droneshowlatinamerica](http://www.facebook.com/droneshowlatinamerica).

[Source: Alexandre Scussel, Editor MundoGEO Portal and magazine by way of Santiago Borrero]



*"The DroneShow 2015 is the 1st Drones Fair in Brazil..."*

## CAF - Development Bank of Latin America

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## GeoSUR Program

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[www.geosur.info](http://www.geosur.info)

## Other events... continues

### CAF's EXECUTIVE PRESIDENT PROPOSES LINES OF ACTION WITH THE PACIFIC ALLIANCE

Enrique Garcia, Executive President of CAF-Development Bank of Latin America, announced the main lines of action proposed by CAF to develop together with the Pacific Alliance. "During the Paracas Summit, we will propose the establishment of an Infrastructure Fund, the development of a strategy regarding the subject of innovation, and support for the Entrepreneurship Observatory that the Alliance is currently implementing" Garcia said.

The Pacific Alliance was founded in 2011 as a regional integration initiative formed by Chile, Colombia, Mexico and Peru, under the Pacific Rim Forum. It aims at defining a strong integration area that promotes greater growth, development, and competitiveness of the economies included by progressively seeking the free circulation of goods, services, capital, and people, as well as becoming a platform for economic and commercial integration toward the Asia-Pacific region.

[Source: [CAF](#)]

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### GRADUATE COURSES ON GEOMATICS AT CENTROGEO, MEXICO

The Geography and Geomatics Research Center "Ing. Jorge L. Tamayo" (CentroGeo) of Mexico, is pleased to invite applications to the masters and doctorate programs on Geomatics with scholarships available for foreign students. The above entails that interested persons need to make the necessary arrangements to remain in Mexico during the graduate program, as well as meeting all the requirements listed at: <http://www.centrogeo.org.mx/posgrado.php>. Contact: Javier Aldabe [jaldabe@centrogeo.org.mx](mailto:jaldabe@centrogeo.org.mx) and [posgrado@centrogeo.edu.mx](mailto:posgrado@centrogeo.edu.mx).

[Source: Maria Elena Flores Maldonado, Dissemination, Geography and Geomatics Research Center "Ing Jorge L. Tamayo", Mexico]

### 7th CONVENTION ON SURVEYING AND CONGRESS ON MAPPING AND SDI, CUBA

Both the Convention and the Seventh Congress of Cartography and Spatial Data Infrastructure will take place from September 22 to 25 in Havana, Cuba. A pre-conference workshop on "Mapping on the Cloud and Spatial Big Data" will be held on September 22 at the Institute of Tropical Geography. More information at: [www.agrimensuracuba.com](http://www.agrimensuracuba.com). Contacts: Tatiana Delgado [tdelgado@ind.cujae.edu.cu](mailto:tdelgado@ind.cujae.edu.cu), and Jorge Luis Martin Chioldes [chioldes@isdi.co.cu](mailto:chioldes@isdi.co.cu).

[Source: Tatiana Delgado, President, Congress of Cartography and Spatial Data Infrastructures]



Graduate Courses on Geomatics, Mexico



7th Convention on Surveying and Congress on Mapping and SDI, Cuba