



“GeoSUR develops geographic services on a free-access web platform”

Inside this Issue:

- The interview of the month with Emilio Lopez, Director of the CNIG of Spain.
- Patricia Leon, of IDEAM, Colombia, outlines the process of managing environmental data and geographic information.
- Jesus Suaniaga, from the coordination of GeoSUR, comments on recent and relevant geospatial events in the Americas.
- Rodrigo Barriga, Secretary General of the PAIGH, emphasizes the contribution of regional organizations regarding geospatial information.

The Editor's Note

Inside this issue, an interview with Emilio Lopez illustrates mutual benefits of the Iberian-American collaboration through GeoSUR. Permanent columns, on one hand share changes on the administration of CAF and the coordination of GeoSUR; and on the other, highlight contributions of the joint action plan between PAIGH, SIRGAS, the GeoSUR Program and UN-GGIM: Americas for geospatial information availability and capacity building in Latin America and the Caribbean.

GeoSUR newsletter seeks to disseminate GeoSUR Program's achievements and characteristics as well as events, projects and best practices for the application of geographic information 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@ipgh.org.

Novelties in GeoSUR

GeoSUR Award Sixth Competition, year 2017



Premio GeoSUR
Sexta edición, año 2017

“Sixth issue of the GeoSUR award coincides with the tenth anniversary of the GeoSUR Program; and so the technical presentation of the winning project will take place at the 10th meeting of GeoSUR to be held on the 25th of October, 2017, in Panama City.”

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Institutions or individuals with their origins in any Latin American or Caribbean country may participate. The terms of the Call, are available at: <http://www.ipgh.org/geosur/files/premio-geosur/GeoSUR Award 2017.pdf>. Applications must be submitted to the jury at the General Secretariat of the PAIGH exclusively by electronic means to the address secretariageneral@ipgh.org by **August 31st**, 2017.

Each year the award is granted to the outstanding activity arising from the relationship of the participating GeoSUR Program institutions based on the geospatial data available on the geoportal, on the institutions themselves, and on the use of geospatial information services offered in Latin America and the

Caribbean. Special consideration will be given to the facility with which spatial data can be accessed, applied and used, on the basis of the products, services or spatial data bases of the candidates.

Recent Previous Winners

Fifth award (2016): Use of the Spatial Data Infrastructure of the Military Geographic Institute of Ecuador for the immediate response to a natural disaster; case of the earthquake of Ecuador in 2016.

Fourth award (2015): Digital Map of Mexico, Institute of Statistics and Geography (Mexico).

Third award (2014): Computer platform to develop systems for monitoring, analyzing and warning of environmental extremes, National Institute for Spatial Research (Brazil).

[Source: Rodrigo Barriga, Secretary General of the PAIGH]

CNIG has obtained significant benefits from its collaboration in GeoSUR projects, says Emilio Lopez, Director General of the CNIG, Spain



Emilio Lopez is Director General of the National Geographic Information Center (CNIG) and President of the Board of Directors of the Geographic Information Infrastructure of Spain. He has been involved in the Spatial Data Infrastructure of Spain since 2003 and has participated as an expert in numerous training courses and national and international working groups.

“...the CNIG can only bet on one way: continuing and deepening cooperation relations and projects with the PAIGH and the CAF, particularly under the umbrella of the GeoSUR Program.”

The National Geographic Information Center, also known by the abbreviation CNIG, is "an autonomous organization of a commercial nature assigned to the Ministry of Development through the National Geographic Institute (IGN)". Emilio Lopez talks about the CNIG and its relationship with GeoSUR:

The National Geographic Institute of Spain and the National Geographic Information Center -under your direction-, have collaborated closely and for years with the Pan American Institute of Geography and History (PAIGH), the CAF and the GeoSUR Program. How do you perceive the achieved results and the projection of this cooperation?

Since accepting the appointment of Director of the CNIG in 2014, the support of the Director General of the IGN and President of the CNIG has been unconditional, and the commitment to the participation of the CNIG in Latin American projects has been decided and continuous.

It could not be otherwise, given that the Statute of CNIG includes the "dissemination of cartographic knowledge in Spanish and Iberian-American societies" among other functions of the organization.

However, this is not the main reason for our collaboration with PAIGH and the CAF. The CNIG has obtained significant benefits from participation in the projects of the GeoSUR Program, among which we could highlight the following:

- Involvement in the training of geographic information technology-experts requires our technicians to keep constantly

updated on knowledge relevant to the subjects taught, and allows them to learn firsthand on the needs of partners in participating institutions.

- Relations with Iberian-American organizations -which in many cases have very remarkable and technologically advanced experiences and good practices-, enhance our knowledge and significantly influence the future plans of the IGN and the CNIG.
- Being part of such emblematic and transcendent projects as the Integrated Map of the Americas or the Latin American Metadata Profile is a unique opportunity that we have been given and which we deeply appreciate.

And, we believe that for the Iberian-American institutions the results obtained out of this collaboration have also been very gainful.

Today, Spatial Data Infrastructures in Latin America are a reality, and although much remains to be done, their implementation is a fact.

There is a consolidated network of experts that grows year after year. The Integrated Map is progressing well and incorporating more and more data sets, and the LAMP profile has become a backbone for data harmonization and service interoperability.

Therefore, based on conclusions of the completed abovementioned efforts, the CNIG can only bet on one way: continuing and deepening cooperation relations and projects with the PAIGH and the CAF, particularly under the umbrella of the GeoSUR Program.

Emilio Lopez... continues

Certainly, the support for developing projects such as the integrated sub regional maps in the Americas, the provided training, and the collective construction of the Latin American Metadata Profile LAMPv2 stand out; but what could be those issues that are not yet addressed and that from the Iberian perspective may be incorporated into the next stage of this collaboration?

Undoubtedly, there are substantial advances in the sub-regional maps and the LAMPv2 resulting of the commitment and dedication of all agents involved. However, there is room for improvement in these projects and for future paths, among which we can highlight the following:

- Completion of the Integrated Map of the Americas including: information from all countries; an increasing number of accessible and thematic data sets; improvement of the provided-information quality; generation of visualization, download and consultation services; and development of functional applications for users, among others.
- Training improvement by way of: Course adaptation to novel technologies; development of new and more specialized courses; and adjustment to the needs of specialists.
- Adaptation of the LAMP Profile to current versions of the ISO 19100 series standards, and above all, by disseminating and assisting their implementation by different geographic data and service producers in order to establish the GeoSUR Program Catalog as a reference access-point to the geographic information available in Latin America.

In 2017, the GeoSUR Program celebrates ten years of operations. In the region, it is the first initiative related to the production, access and application of transnational spatial data to reach this goal. The IGN and the CNIG have contributed to this achievement in relevant ways. However, great challenges remain and there is still no solid SDI. What would you recommend to accelerating the pace and getting better results?

This is a very difficult question. Take as an example Europe where we have a legislative framework as is the INSPIRE Directive that creates general rules for the establishment of a Spatial Information Infrastructure in the European Community based on the Infrastructure of Member States.

However, implementation of this Directive is not easy and is demanding significant coordination and cooperation efforts among countries, in addition to consuming important technical and human resources.

Deadline for full implementation of this Directive is 2020, thirteen years after its publication.

However, from my point of view, and taking into account the benefit of having a normative support, the most important aspect of any new development is its utility.

In other words, it is essential that data sets and services that are provided to citizens are useful and easy to use.

To achieving this, first step is to have quality data with adequate update periods for the needs to be satisfied.

Second, these have to be easily accessible, through open data policies that do not restrict or hinder their use.

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"...all these actions need to be coordinated between different data and service publishers in order to provide comprehensive solutions and to ease reuse."

Emilio Lopez... *continues*

Third, software developers and IT experts need to be able to use this data through interoperable services and APIs that allow them to create value-added applications and to bring this information to users, whether private companies, public institutions or citizens.

Finally, all these actions need to be coordinated between different data and service publishers in order to provide comprehensive solutions and to ease reuse.

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This year the GeoSUR Program celebrates its tenth anniversary. The 10th GeoSUR Meeting will be held on October 25, 2017 in Panama City, in the framework of the 21st General Assembly of the PAIGH, which will take place from October 23 to 27.



GeoSUR Program: Basic Figures

Years in Operation (2007-2017)	10
Participating Institutions	106
Beneficiary Countries	26
GeoSUR Network Specialists	384
Officials Trained	316
Available Digital Maps	1,123
Available Metadata Files	17,956
Available Metadata in GeoSUR Catalog	58,675
Map Services (WMS) (complying with OGC and ISO 19115 standards)	459
WFS Services	39
Map Viewers	118
Catalog Services (CSW)	18

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

Specialized Contribution:

IDEAM'S GEOGRAPHIC DATA AND INFORMATION MANAGEMENT PROCESS

By Patricia Leon, IDEAM, Colombia

The Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) of Colombia, is a public institution conveying technical and scientific support to the National Environmental System (SINA). For more than 20 years has produced knowledge and reliable, consistent and timely information on the state and dynamics of natural resources and the environment of the country, thus providing an important information resource to facilitating definition and adjustment of environmental policy, and for decision making both by the public and private sectors, and by the citizens more general.

In this sense, IDEAM as a member of the SINA is constantly striving to fulfill its main objective of strengthening technological, scientific, administrative and financial capacity to producing the country's timely hydrological, meteorological and environmental information with the required quality to meeting main users' needs.

Hence, efforts have been made to building and implementing policies, standards and guidelines for official data and geographic information management since 2007, in order to assuring quality and suitability for their use by internal and external users.

These determinations were consolidated in 2009 with publication of Resolution No. 2367 of December 31, 2009, "which establishes data and information management standards for IDEAM, and adopts the generic institutional Data and Information Management Process."

Within this framework, four phases were proposed for the Data and Information Management Process: Planning,

Production, Verification, and Publication. These were extended to five phases during an updating process that began in 2015:

1. **Technical Planning:** During this phase characteristics for all products are defined, as well as variables and technical requirements to determining quality levels, and the data and information production-methods and procedures.
2. **Product Development:** In this phase what was planned is executed; it also includes tracking for problem detection, the continuous improvement of product-planning, quality control, and documentation of completed procedures.
3. **Verification:** In this phase the review process is undertaken by comparing the executed with the planned, besides verifying the whole product-documentation. It is an objective complying-assessment by a third party concerning the dissemination and publication requirements.
4. **Publication and Conservation:** Once approval and verification are completed, uploading into institutional databases and dissemination, as well as planning for conservation and preservation take place.
5. **Feedback:** This additional phase aims at observing current continuous-improvement guidelines for quality standards, while also considering the requirements and needs raised by users.

This five-phase process has become one of main pillars for developing the Geographic Information System of IDEAM.



Figure 1

"...IDEAM as a member of the SINA is constantly striving to fulfill its main objective of strengthening technological, scientific, administrative and financial capacity to producing the country's timely hydrological, meteorological and environmental information..."

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IDEAM'S GEOGRAPHIC DATA AND INFORMATION... *continues*

Since all is part of an Integrated Management System, the application and use of tools developed to assuring information-quality of diverse environmental topics is validated through the publication means available to the system.

An important aspect of the management process is to understand how each tool integrates into a respective phase (Figure 1).

The management core revolves on a cyclical process that is fed back and based on the users' requirements and needs identified at each stage. Figure 1 illustrates the structure of abovementioned procedures and mechanisms.

Orange boxes depict the performed actions, and the circles represent instruments linked to each stage of the process: Green circles show the Documenting Tool action and yellow circles point to their use within a matching stage. There is no yellow circle if in previous phases a corresponding green circle does not exist.

To this end, instruments supporting this process in IDEAM were created from 2010 to 2013, both for validation of institutional information and for publication through different mechanisms of the Information System.

Early implementation of these tools was undertaken for four emblematic institutional products. But to the date, there are now 320 validated products mainly from the technical areas of Meteorology, Hydrology, Ecosystems, and Environmental Studies.

Due to the above, and for the Publication Phase (i.e. information access and use), throughout these years the Environmental Geographic

Information System of IDEAM has incorporated access mechanisms for an Institutional Geoportal that now includes four components: A Geoviewer, a Metadata Manager, a Geoservice section, and a Map Gallery (Figure 2).

Institutional Viewer: Allows publishing, visualizing and downloading more than 320 official geographic products of the IDEAM; includes analysis, time series, and location tools, among others.

Institutional Metadata Manager: Allows searching, browsing, sharing, exchanging and downloading metadata of the abovementioned products.

Institutional Geoservices: Includes lists of WMS, WFS and WCS services that may be consumed by users, allowing interoperability between diverse information systems as well as direct access to updated information. Geoservices comply with standards and specifications defined by the Open Geospatial Consortium (OGC).

Map Gallery: Allows visualizing graphic-samples and downloading maps in PDF or JPG formats of 320 products arranged in the Institutional Viewer.

Finally, both the Data and Information Management Process as well as the Environmental Geographic Information System of IDEAM are recurrently analyzed and updated as information policies or new information and communication technologies emerge so that public organizations may provide open and timely information to all user-types whether public or private.

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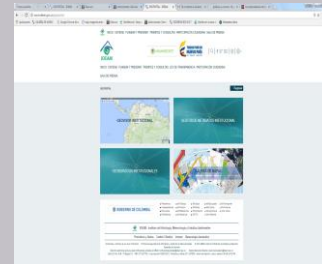


Figure 2

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From the CAF-GeoSUR Program

By Jesus Suniaga, Coordinator of the GeoSUR Program, jsuniaga@caf.com

Renovation Times

After 25 years of successful management, Luis Enrique Garcia culminates his role as Executive President of CAF, and we highlight his welcoming to different regional initiatives including GeoSUR. Luis Carranza-Ugarte will hold for a period of five years the position of Executive President of CAF - Latin American Development Bank- to whom we wish the greatest success.

A seminar on "Geospatial information for social, environmental and economic development of the Americas and the Caribbean countries" was held on April 3-5, 2017 in Santiago, Chile; during Plenary, Santiago Borrero presented ongoing activities of the GeoSUR Program including:

The Geoportal redesign with addition of new services; Update of the Topographic Processing Service (TPS); A campaign to strengthening the network of OGC services associated with supranational data in Latin America; Development of the Integrated Digital Map of South America (MIAS); Development of a new version of the Latin American Metadata Profile (LAMPv2); and the Use of Flood Data in Latin America.

In addition, progresses made on relevant topics were presented, such as: The Global initiatives converging to geospatial information management, the progress of the UN Regional Committee for Geospatial Information Management, the Joint Action Plan for the Americas, the Reference System for the Americas, the GEO-Statistical Framework for the Americas, and key advances of diverse national SDIs in the Americas.

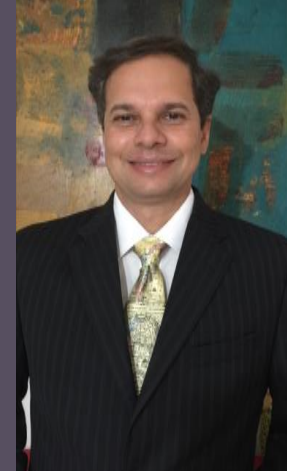
The Fourth Session of UN-GGIM: Americas took place back to back with a large representation of countries, and a newly elected board of directors. We express to authorities of UNGGIM: Americas our best wishes for success during the period 2017-2021.

In the same session, some changes in the conduction of GeoSUR Program were announced: Jesus Suniaga, Chief Executive of CAF Vice Presidency of Infrastructure -who now writes-, assumes the position of Coordinator, and Santiago Borrero undertakes the role of External Advisory Consultant for the Program.

I want to share with you my first experience and also my first contribution to the regional spatial community: "when recently graduated from IGAC and being a consultant for CAF in 2006, I presented an idea to solve representation and spatial management of Integration-Infrastructure projects based on official cartographic information of CAF member countries, a proposal that was added to the international initiatives underway at that time in the PAIGH and other organizations, and the GeoSUR Program emerged."

Today, it is an honor to take on the coordination role of this initiative that I helped building from its beginnings.

Thanks to the contribution of CAF and the support of the PAIGH and other collaborating institutions, the GeoSUR Program has remained for 10 years as a unique long-term initiative in our region.



Jesus Suniaga, Coordinator of the GeoSUR Program

"After 25 years of successful management, Luis Enrique Garcia culminates his role as Executive President of CAF, and we highlight his welcoming to different regional initiatives including GeoSUR. Luis Carranza-Ugarte will hold for a period of five years the position of Executive President of CAF..."

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From the PAIGH's Secretary General

By Rodrigo Barriga

It is now a fact that geospatial information is very important for most activities undertaken by humankind, especially given the availability and capabilities currently provided by the so-called information technologies. Specialized organizations, such as the [Boston Consulting Group](#), [Oxera](#), [Geospatial Media](#) and others, have produced interesting studies on the economic importance of the geospatial industry worldwide, where not only are analyzed their structure and current size of several billions of dollars, but also denote the high expectations for the coming years. Likewise, we may constantly observe a significant increasing growth of specialized technologies on the capture, processing, analysis and administration of this type of information. Examples of these may be reviewed in magazines such as [GIM International](#). Therefore, in 2015 the Committee of Experts on Global Geospatial Information Management (UN-GGIM) raised a number of [future challenges](#), including important issues related to geospatial information that are suggested to keep in mind and to visualize under a regional-reality perspective for Latin America:

- Intelligent Cities and the Internet of Things
- Artificial intelligence and large data volumes (BIG Data)
- Positioning and indoors mapping
- Integration of statistical and geospatial information
- Trends in technology and the future direction of data creation, maintenance, and management
- Legal and policy developments
- Training requirements and training mechanisms

- The role of the private and non-governmental sectors
- The future role of governments in geospatial data provision and management

From the point of view of regional organizations, we are contributing to generate a cooperation platform for development of Geospatial Data Infrastructure at the level of the Americas, for which we have established a joint action plan between the PAIGH, SIRGAS, the GeoSUR Program and UN-GGIM: Americas. Within this, we have coordinated our roles to complementing regional efforts collaboratively in procurement of a continental SDI that has been extended beyond our continent through partnership with the Iberian-American Network for Geographic Information Infrastructure (R3IGeo) that is coordinated by the National Geographic Institute of Spain and its National Geographic Information Center (CNIG).

From the point of view of the PAIGH a key element is and will be to continue acting in a collaboration framework between all actors participating in these efforts, as well as with those that would be integrated, either to the aforementioned joint action plan or to new cooperation mechanisms that could be created in the future as a way to strengthening fulfillment of common objectives through achieved synergies.

Therefore, we invite the various regional initiatives to join this effort aimed at speeding up the integration of Geospatial Information into a collaborative infrastructure for the benefit of the entire region.



Rodrigo Barriga, Secretary General of the PAIGH

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**CAF - Development
Bank of Latin America**

investorinformation@caf.com

www.caf.com

PAIGH

secretariageneral@ipgh.org

www.ipgh.org

GeoSUR Program

geosur@caf.com

www.geosur.info

Other events in the region

CAF HIGHLIGHTS THE CONNECTION BETWEEN BETTER BROADBAND AND GROWTH IN LATIN AMERICA

The development of broadband communication infrastructure has a significant impact on the growth and productivity in Latin America, besides allowing the emergence of new companies energizing the economy of the region. CAF has published a report identifying main barriers and best practices in Latin America in relation to deployment of telecommunication infrastructures, aimed at reducing limitations on telecommunication infrastructure investment by pertinent operators.

CAF telecommunications specialist Mauricio Agudelo, stressed that broadband and its use for digitization in general as well as the incorporation of information and communication technologies (ICT) in the economy, promote greater labor productivity, and that by means of a better broadband 50 percent of Latin Americans who currently do not have access to the Internet could have it and be included in 'digital service access' figures.

[Source: [CAF](#)]

"...broadband and its use for digitization in general as well as the incorporation of information and communication technologies (ICT) in the economy, promote greater labor productivity... by means of a better broadband 50 percent of Latin Americans who currently do not have access to the Internet could have it and be included in 'digital service access' figures."

SURVEY ON NEW TECHNOLOGY TRENDS ON SDI IN LATIN AMERICA

Researchers from the University of Azuay (Ecuador) and the Javeriana Pontifical University (Colombia) invite the Latin American community (public institutions, private companies, independent professionals, universities, and research centers) to participate in a survey on the adoption of new technology trends in Spatial Data Infrastructures (SDI) in Latin America. The survey seeks to identify in the region the state of progress of applications that integrate Spatial Data Infrastructures with new technology trends, such as: mobile devices, sensors, cloud computing, voluntary geographic information, augmented reality, Semantic Web and Big Data.

The information collected will help establishing the pertinent extent of progress in Latin America. Results of the survey will be published in related bulletins and articles, thus contributing to the promotion of reported applications, while quoting collaborators. The survey may be found at: <https://goo.gl/RrKff0>. Deadline for receiving contributions is **June 16, 2017**.

[Source: Luis M. Vilches-Blazquez, Javeriana University, by way of the GeoSUR Geoportal Comments Section]



Survey on new technology trends on SDI in Latin America