

# A short History of the IEEE Region 9

## One Hundred Years of Electrical Engineering in Latin America

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**Abstract**—In Latin America, first recorded formal interest in the Activities and Publications of the AIEE (American Institute of Electrical Engineers) was in Mexico, in 1910. A Section was formed in that city in 1922. In 1939, the first IRE (Institute of Radio Engineers) Section outside North America was formed in Buenos Aires, followed by a few more in the 1950's. After the formation of the IEEE (Institute of Electrical and Electronic Engineers), the Region 9 comprising Latin America and the Caribbean was formed in 1966; First Regional Director was Guillermo Andrews from Argentina. In this article we describe those early events and also detail the formation of Sections and Councils. Other topics explored include the Publications of the Region, its Conferences and Meetings, Communications, Student Activities, IEEE Award and Recognitions Recipients, etc

**Keywords**—component; IEEE Region 9; Latin America; History of Engineering

### I. INTRODUCTION

In the first sections of this paper we describe the formation of the pre-IEEE (Institute of Electrical and Electronic Engineers) entities in Latin America and the beginnings of the IEEE Region 9. Section IV presents a list of the Regional Directors. In Section V chronological data about the formation of more Sections and Councils is presented. Section VI presents a short resume of the Publications of the Region. Information about Conferences in the Region is the object of Section VII. Section VIII describes the early use of electronic communications. A short list of the most prestigious IEEE and MGAB (Members and Geographic Activities Board) Awards given to distinguished Members of the Region, and its presence in the IEEE Board are the object of Sections IX and X. Three IEEE Milestones have been recognized in the Region and are detailed in Section XI. Section XII presents a list of the yearly Regional Meetings. Students and Student Conferences are the object of Sections XIII and XIV. Finally, in Section XV we give an overview of the present state of the Region.

### II. THE FIRST SECTIONS OF THE AIEE AND IRE IN LATIN AMERICA

The first explicit interest in the Activities of the AIEE (American Institute of Electrical Engineers) in Latin America was registered in Mexico in 1910 when H. S. Foley and J. W. Hale expressed their interest in local activities and forming a Section. A local Committee was elected with J.W. Hale as President for the period 1911-12. However, the formalization as an AIEE Section was not successful at the time and was only restarted after World War I.

On June 29, 1922 the Mexico City Section of the AIEE was officially approved at the Niagara Falls AIEE Meeting. Its first Chair was G. H. Paget. Two noteworthy events in the following years sealed the Section: a visit by AIEE President H. B. Smith in 1930 and the hosting of one of the main AIEE's meetings in Mexico in 1948.

Meanwhile, 1932 saw the formation of a Student Branch of the AIEE at the University of Puerto Rico in Mayaguez. This Student Branch, which is the oldest in the Region -and perhaps the first outside North America, has kept active and vibrant into the present days.

On May 2nd, 1939 thirty-four engineers met in Buenos Aires, Argentine with the purpose of forming a Section of the IRE (Institute of Radio Engineers). The paperwork was quickly finished and formal approval of the Section was given on October 4th of the same year. Adolfo Cosentino was named first Chair of the IRE Argentina Section, which was the first one outside North America.

That same year, the active Mayaguez campus of the University of Puerto Rico formed an IRE Student Branch. The Student Branch (#193) of the University of Buenos Aires would come a few years later, in 1960.

The first Brazilian IRE Section was formed in Rio de Janeiro on August 22, 1956. Its first Chair was Walter Heiniger. Two years later in Bogota, Colombia, W. Meek was the organizer and first Chair of the first Colombian Section. The last pre-IEEE section was set up in Santiago, Chile in 1961, with Julio del Rio as its first Chair.

### III. AN IEEE REGION IN LATIN AMERICA

In 1963, when merging the AIEE and IRE formed the IEEE, there existed in Latin America one AIEE Section (Mexico, 1922) and four IRE Sections (Argentina, 1939; Brazil, 1956; Colombia, 1958; Chile, 1961). They belonged to the Region known as "rest of the world" together with Sections from other continents.

The Region 9 as we know it now was born in 1966 when the IEEE reorganized its geographic structure. The newly formed Region 9 was to include all of the Americas excepting Canada and the United States. By this time, two new IEEE Sections had already been formed in Puerto Rico (1964), and Sao Paulo (1966); the new "Region 9 IEEE Latin America" consisted of 7 Sections.



Figure 1. Guillermo Andrews, first Regional Director

The new Region would start formally on January 1st, 1967. In November 1966 the IEEE President, Walter Mac Adam visited 7 countries in the Region to contact the existing Sections' volunteers and to promote activities and the formation of more sections. Two officers from the Region, Francisco Hawley and Guillermo Andrews, were also part of the trip.

The first and second Region 9 Directors were Guillermo Andrews from Argentina (1966/67), and Francisco Hawley from Mexico (1968/69), both of whom were instrumental in the creation of Region 9. Guillermo Andrews chaired the first Regional Committee, with Francisco Hawley serving as vice-chair and treasurer, and Rainer Plugovel from Chile serving as Secretary. Alberto Rodriguez from Venezuela was in charge of Student Activities.

The first Regional Meeting with the Section Chairs was held in Buenos Aires in 1967, and the Regional Committee has been meeting every year since. It is customary to rotate the site of the Regional Meeting among all of the appropriate locations. (See Table II in Section XIII).

#### IV. THE REGIONAL DIRECTORS

The Regional bylaws indicate that the Office of the Regional Director has to rotate among the different countries. As this is an elected office, this requisite is achieved by barring candidates from the countries that are already represented in the trio of Past Director, Director or Director Elect. See Table I, for a complete list of all Regional Directors to the present day.

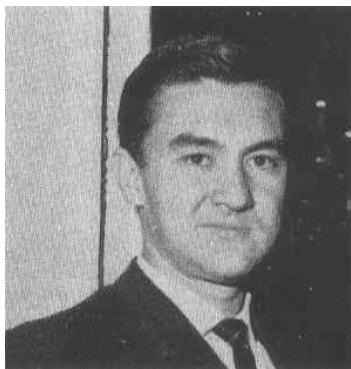


Figure 2. Francisco Hawley, the second Regional Director

TABLE I. THE REGIONAL DIRECTORS

Years	<i>Regional Director</i>	<i>Country</i>
1966-67	Guillermo Andrews	Argentina
1968-69	Francisco Hawley	Mexico
1970-71	Carlos Lohman	Brazil
1972-73	Ernesto Obregon	Colombia
1974-75	Jose R. Costa De Lacerda	Brazil
1976-77	Luis Ruperto Jimenez	Peru
1978-79	Carlos Rivera Abrams	Puerto Rico
1980-81	Oscar Carlos Fernandez	Argentina
1982-83	Eduardo Bonzi	Chile
1984-85	Ramiro Garcia Sosa	Mexico
1986-87	Sergio Fronterotta	Brazil
1988	Carlos Rodriguez	Panama
1989-91	Luis T. Gandia	Puerto Rico
1992-93	Eduardo Arriola	Mexico
1994-95	Hugo Fernandez-Versteggen	Argentina
1996-97	Antonio Bastos	Brazil
1998-99	Juan Carlos Miguez	Uruguay
2000-01	Pedro Ray	Puerto Rico
2002-03	Hugh Rudnick	Chile
2004-05	Francisco Martinez	Mexico
2006-07	Luis Pilotto	Brazil
2008-09	Enrique Alvarez	Peru
2010-11	Tania Quiel	Panama

#### V. NEW SECTIONS AND COUNCILS

Some of the countries in the region are quite large (notably Brazil and Mexico) and the demand for local activities in cities other than the capital was addressed with the formation of more Sections. Sao Paulo in Brazil in 1966 and Monterrey in Mexico in 1975 were the first "second Sections" in their countries. A direct consequence of having multiple Sections in a single country was the formation of Country-Councils, first in Brazil (1970) and then in Mexico (1976).

The Central America Section was formed in 1970 under the direction of Rodolfo Konigsberg of Guatemala. It was comprised of five countries: Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua. In the following years, each of those countries formed its own sub-section.

In 1972, a Section organized in Panama by a group of IEEE Members led by Carlos Rodriguez received formal approval.

Ten years later, in 1982, both Sections joined to form the Central America and Panama Council, CAPANA (see also Section VII). Subsequently, all of the country subsections were upgraded to Sections, starting with Costa Rica in 1986 and ending with Nicaragua in 1995.

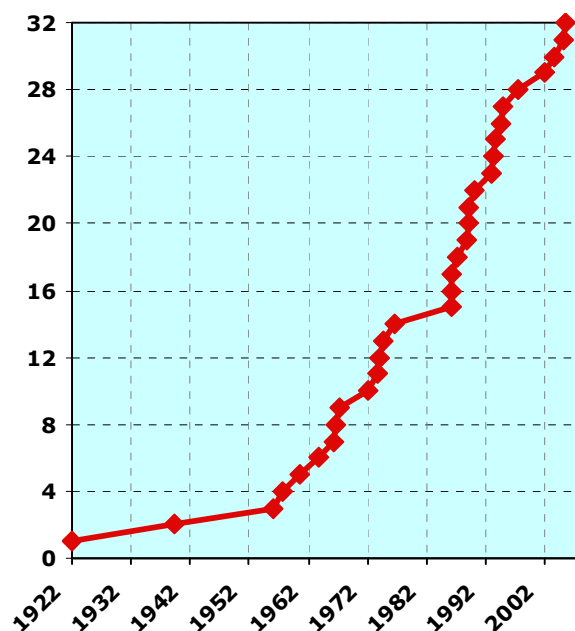


Figure 3. Evolution of the number of Sections in the Region

An interesting story is the early formation of a Section in Bolivia in 1976, when Jose R Lacerda was the Regional Director. Lack of sustained membership or activities led to its dissolution a few years later. It was not until 1998 that the Section was re-formed.

A Section was formed in Jamaica in 1977. However, a few years later, Members of the Jamaica Section expressed their discomfort at being in a Region where most of the Members had a latin cultural background and spoke Spanish or Portuguese. A petition was made to move the Jamaica Section out of Region 9 and into the IEEE Region 3, which is composed of the Southeastern part of the U.S. and was the closest English-speaking Region. The Region 9 Committee at its 1985 Caracas Meeting duly approved the petition, and Jamaica has since belonged to Region 3.

## VI. THE PUBLICATIONS OF THE REGION

### A. *ELECTROLATINA*.

An immediate preoccupation of the nascent Region was to edit and distribute among its Members a technical publication in Spanish or Portuguese, the only two major languages in Latin America. Fortunately for the Region, it is not very difficult for Spanish-speaking or Portuguese-speaking Members to understand technical papers in the other language, given their similarities.

Thus, in 1967 the first number of “ELECTROLATINA” was published. The chief Editor was Eric Wallsten from the Mexico Section and there were corresponding Editors in every Section/country of the Region. The publication continued for 9 years until December 1975.

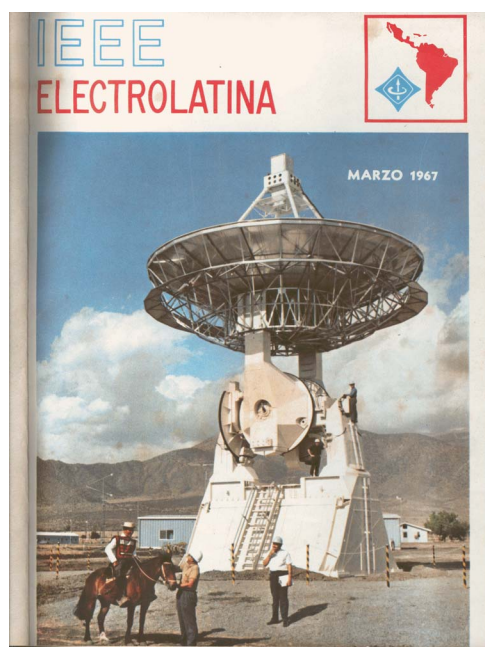


Figure 4. Cover of the First Electrolatina, 1967

### B. *NoticIEEEero* <http://www.noticieero.org>

The word “NoticIEEEero” is a play on words that intermingles IEEE and the Spanish word “noticiero,” which means “Newsletter.” For some years newsletters had been edited and distributed among the Regional Committee and key volunteers. In the late 1980’s, an effort was made in Brazil to produce a publication for all of the IEEE Members in the Region. This publication was printed in newspaper format in Brazil and packets of copies were sent to each Section to be locally distributed and used as promotional material at meetings. Waldyr Lukato from Sao Paulo was the Editor. This System did not work well for all Members, and the publication was interrupted in 1989.

Starting in 1990, the NoticIEEEero changed its format to a booklet, was printed in Uruguay and sent by post to all the Professional Members in the Region; packets were also sent to the Student Branches. The first Issue appeared in June 1990. With the support of Regional Directors Luis T. Gandia and his successors the model was successful for 12 years and 40 issues were published.

First editor and publisher of this “second era” NoticIEEEero was Juan Carlos Míguez (from the newly-formed Uruguay Section). Successive Editors were Marcel Keschner, also from Uruguay, Marcelo Motta from Brazil, Francisco Martinez and Rafael Avalos from Mexico, and Jorge Him from Panama.)

In 2003, rising printing and mailing costs forced the Region to switch to an electronic publication. The .PDF file of the NoticIEEEero started being sent to the e-mail account of every Member in the Region. Some issues have occasionally been printed for distribution at Meetings. Editors in the last few years have included Luis Arenas and Pablo Sanchez from Colombia and later Ignacio Castillo from Mexico.



Figure 5. A NoticIEEEero from 1988

Finally, in 2008 as the size of the newsletter had grown, distribution to mailboxes was suspended and the NoticIEEEero can be read on the web, or the file downloaded if desired.

### C. Latin America Transactions <http://ewh.ieee.org/reg/9/etrans>

In 2003, being Regional Director Hugh Rudnick, a new publication was started. The “Latin America Transactions” is an electronic-only, peer-reviewed technical publication that accepts papers in Spanish, Portuguese and English. Jose Jardini (F) was the first editor, and the first Issue appeared in October 2003. At the time of writing, Issue Number 32 had been published in June/2009. The publication has now been included in IEEE Xplore.

## VII. CONFERENCES IN THE REGION

In 1974, Regional Director Jose Roberto Lacerda, organized the first **LATINCON** in Sao Paulo, modeled on the successful North American **INTERCON**. It was an important event, with concurrence from many sections of the Region. **LATINCON** was established as a biannual conference and was successively held on even years for almost twenty years. The Regional Committee Meeting corresponding to that year was usually held in conjunction with **LATINCON**.

One of the most successful was the 1988 **LATINCON**. This excellent conference was held in Buenos Aires and included Marvin Minsky and Ray Dolby, among other distinguished speakers. A few years later the model of a Region-wide horizontal conference started to fail. The last two **LATINCON**'s were the 1990 Conference, held in conjunction with **MEXICON** in Mexico and the 1992 Conference in Santiago de Chile, Chile.

Some Council-organized Conferences have thrived and are still held every year.

Held every year in alternating countries of Central America, the **CONCAPAN** is a good example of conferences in the Region. It has a long tradition dating back to 1971, years before the formation of the **CAPANA** council. The Central America Section organized the first “Convencion de Centro America”, **CONCA**, in 1971, from July 30 to August 3 in the city of Guatemala. It was decided that **CONCA** would be organized in each country twice, moving afterwards to another country within the Central America Section.

The last **CONCA** was **CONCA XI**, also in Guatemala, in 1980. At this conference Antonio Raven (chair of the Panama Section) and the Central America Section officials decided that the next convention would be held in Panama and its name would change to **CONCAPAN**. The formation of the **CAPANA** Council was also decided at this Meeting.

In 1981, with the formation of the **CAPANA** Council already in process, the first **CONCAPAN** was held in Panama from July 9th to 11th. It has been held every year since, and the hosting privilege is shared among the countries; the **XXIX CONCAPAN** will be in San Pedro Sula, Honduras from November 4 to 6, 2009.

The Andean Council was approved in 2002. Even prior to the approval, the Section volunteers led by Juan Bermudez had already organized the first **ANDESCON** in Isla Margarita, Venezuela, in 1999. The next **ANDESCON** was in Colombia in 2004 and since then it is being held every other year in a different country.

**MEXICON** and **BRASILCON** are other council-wide Conferences warranted by the multiple sections and number of Members in those countries.

There are many IEEE sponsored and co-sponsored Conferences being held in countries of Latin America, without any significant involvement of the Region and sometimes independently of the local Section.

Some Societies, notably the Power and Energy Society, are starting to organize periodic conferences with significant local support from the Sections and Chapters. “Transmission & Distribution Latin America” for instance, has already been held 4 times on even years, in Sao Paulo (2002 and 2004), Caracas (2006) and Bogota (2008). In 2010 it will come back to Sao Paulo.

**LATINCOM** is another example, from the Communications Society.

## VIII. COMMUNICATIONS

Being an extended, multi-country Region, electronic communication -especially e-mail- has been intensively used since the early 1990's. To avoid delays of postal services (which in some places and times could be very long) and the expense of telephone calls, extensive usage of e-mail started in 1990 using Comppmail for the volunteers who did not have access to University networks. Director Luis T. Gandia, and e-



communications committee chairs Juan C. Miguez and Juan Mendoza, among others, directed this effort.

The Region was the first to achieve 100% Sections e-mail coverage in 1993, which was at that time one of the goals of the Regional Activities Board (now Member and Geographic Activities).

There was a gopher of the Region based in the University of La Salle in Mexico that started in 1993 (gopher://osfulsa.fulsa.mx/70/11/ieee) and the first regional Web started in the University of Puerto Rico at Mayaguez in 1995 with William Velez serving as the first Webmaster (<http://www.r9.upr.clu.edu>).

In 1998 the Web was transferred to Piscataway using the facility "Entity Web hosting, ewh" and Juan Falcon, also from Puerto Rico was the first Webmaster. In that year Director Juan C. Miguez started the "Virtual Office" of the Region as a protected part of the Website for volunteer information and administrative purposes in the Regional Committee.

#### IX. AWARDS AND RECOGNITIONS

Two distinguished former Directors from the Region have received the prestigious **IEEE Haraden Pratt Service Award**.

**Antonio Carlos Bastos** from Salvador, Brazil (Bahia Section) in 2006: "For leadership and distinguished service in sustaining and extending IEEE's global recognition."

**Luis T. Gandia** from San Juan, Puerto Rico (Puerto Rico and Caribbean Section) in 2007: "For outstanding leadership in promoting technical activities at the regional level and the transnational character of the IEEE at the Board level."

The most prestigious Award of the MGA -Member and Geographic Activities Board (previously Regional Activities board, RAB) is the **William W. Middleton Distinguished Service Award**, (given every three years at Section Congress).

In 2002 this Award was given to **Antonio C. Bastos**, (Bahia, Brazil): "For inspiring leadership and dedicated service in promoting IEEE Region, Section and Chapter activities in Region 9, and at the international level".

The MGA/RAB **Larry K Wilson Transnational Award** has been obtained by four volunteers from Latin America:

In 2003, **Hugo Maria Fernandez-Versteggen** (Argentina): "For his significant contributions to making IEEE a truly global Society".

In 1995, **Luis T. Gandia**, (Puerto Rico) for: "A full professional life dedicated to serving and stimulating others, through his example, to live and support the principles and ideals of the IEEE".

In 1986, **Carlos Rivera Abrams**, (Puerto Rico): "For creative accomplishments and exemplary efforts in expanding the Student, Chapter Section and Region activities in Latin America".

In 1985, **Jose Fernando Valdez**, (Peru): "For exceptional leadership and creativity in successfully integrating all of the RAB Objectives into the operations of the IEEE Peru Section".

#### X. REGION 9 IN THE BOARD OF DIRECTORS

Every Regional Director is a Voting Member of the IEEE Board of Directors. Additionally, some distinguished Volunteers from Latin America and some past Regional Directors have served additional terms on the Board as Members of the Executive Committee.

The first to serve as Secretary of the IEEE was Ramiro Garcia Sosa (Mexico) in 1987, followed by Hugh Rudnick (Chile) in 1991, Luis T Gandia (Puerto Rico) in 1994, Antonio Bastos (Brazil) in 1998, Hugo Fernandez Versteggen (Argentina) in 2001 and 2002 and Roberto Boisson de Marca (Brazil) in 2006.

Regional Activities Vice-Presidents have been: Luis T Gandia (Puerto Rico) in 1992/1993, Antonio Bastos (Brazil) in 2000 and Pedro Ray (Puerto Rico) in 2006/2007. Pedro Ray also served as Treasurer of the IEEE in 2003/2004 and was elected IEEE President for 2010, a first for the Region.

On the Technical side, Roberto Boisson de Marca (Brazil) was Communications Society President and Division III Director in 2004/2005. He also served as Technical Activities Vice president in 2008. Luis T. Gandia was Division VI Director in 1999/2000 and Enrique Tejera (Panama) Division VII Director for 2010/2011. Teofilo Ramos from Mexico serves as Educational Activities Vice-president in 2009.

#### XI. IEEE MILESTONES IN LATIN AMERICA

Three IEEE Milestones have been recognized in Latin America, as follows:

In the Chile Section, on October 24, 2001 the pioneer "**Chivilingo Hydroelectric Plant**" was recognized. The 430 kW Chivilingo Plant, built in 1897, was the first hydroelectric plant in Chile and the second in South America. It represented a new key technology and a new source of electrical energy in the Region.

In the Puerto Rico & Caribbean Section the "**NAIC/Arecibo Radiotelescope**" was recognized in November 2001. The Arecibo Observatory, the world's largest radiotelescope, was dedicated in 1963. Its design and implementation led to advances in the areas of antenna design, signal processing, and electronic instrumentation, as well as antenna suspension and drive systems within mechanical engineering.

In the Panama Section, the "**Panama Canal Electrical and Control Installations**" was recognized on April 4, 2003. The Panama Canal project, finished in 1914, included one of the largest and most important electrical installations in the world early in the 20th century. The use of 1,022 electric motors with an installed capacity of 28,290 horsepower largely replaced the steam and water powered equipment then in common use. Reliability and safety were also engineered into the innovative electrical control system, enabling remote lock operation from a central location.

TABLE II. YEARLY MEETINGS OF THE REGIONAL COMMITTEE

Year	Meeting		
	Place	Country	Dates
1967	Buenos Aires	Argentina	
1968	Mexico, D.F.	Mexico	
1969	San Juan	Puerto Rico	3/5 - 5/5
1970	Lima	Peru	
1971	Guatemala	Guatemala	
1972	Bogota	Colombia	
1973	Guaruja, Sao Paulo	Brazil	22/3 - 24/3
1974	Santiago	Chile	28/2 - 1/3
1975	Caracas	Venezuela	2/4 - 4/4
1976	Quito	Ecuador	26/2 - 27/2
1977	Panama	Panama	10/2 - 11/2
1978	Tegucigalpa	Honduras	
1979	Rio do Janeiro	Brazil	5/6 - 6/6
1980	Mexico, D.F.	Mexico	22/8 - 23/8
1981	Salvador, Bahia	Brazil	13/8 - 14/8
1982	Panama	Panama	5/4 - 6/4
1983	San Jose	Costa Rica	14/4 - 16/4
1984	Panama	Panama	9/7 - 11/7
1985	Caracas	Venezuela	21/3 - 23/3
1986	Lima	Peru	19/3 - 22/3
1987	San Juan	Puerto Rico	12/5 - 15/5
1988	Buenos Aires	Argentina	21/4 - 23/4
1989	Monterrey, Nuevo Leon	Mexico	9/4 - 12/4
1990	San Pedro Sula	Honduras	4/4 7/4
1991	Rio do Janeiro	Brazil	15/4 - 18/4
1992	Santiago	Chile	12/4 - 15/4
1993	Acapulco	Mexico	19/2 - 21/2
1994	Guatemala	Guatemala	3/2 - 6/2
1995	Piscataway, NJ	U.S.A.	28/3 - 1/4
1996	San Jose	Costa Rica	26/3 - 30/3
1997	Lima	Peru	18/3 - 21/3
1998	Guadalajara	Mexico	30/3 - 2/4
1999	Panama	Panama	23/3 - 26/3
2000	San Juan	Puerto Rico	24/3 - 26/3
2001	Foz do Iguazu	Brazil	18/3 - 21/3
2002	Miami / Caribbean Cruise		11/3 - 15/3
2003	Morelia	Mexico	7/3 - 9/3
2004	Buenos Aires	Argentina	10/3 - 12/3

Year	Meeting		
	Place	Country	Dates
2005	Santiago	Chile	17/3 - 19/3
2006	Rio do Janeiro	Brazil	9/3 - 11/3
2007	Lima	Peru	7/3 - 10/3
2008	Punta del Este	Uruguay	27/3 - 29/3
2009	Aguas Calientes	Mexico	4/3 - 7/3

## XII. REGIONAL MEETINGS

The Regional Committee, which includes all of the Section Chairs, has met every year since the creation of the Region. Starting in 1990 and every three years, a second, half-day Meeting is held in conjunction with the Section Congress

## XIII. STUDENT MEMBERS IN THE REGION

In Latin America, Student Members are a very dynamic and numerous group. They make up approximately 40% of the total Membership and occupy a special place in the Region. In some sections, there are almost as many Student Members as Professional degree Members.

In the Regional Bylaws, since 1998, a Student representative is a Voting Member of the Regional Committee, and he/she works together with the Student Activities Committee Chair, who is also a Member of the Regional Committee. There are many events including all kinds of meetings, national and even international conferences being planned, organized and conducted by students. The Sections and the Region always give their support, but the Students are the driving force behind those activities.

## XIV. STUDENT CONFERENCES

**CONESCAPAN** is a student conference that takes place every year in alternating countries of Central America. The first one was held in Guatemala in 1981. CONESCAPAN XXVIII is in El Salvador, September 1- 4, 2009

**INGELECTRA** is a series of annual Student Conferences organized and held in Chile, with a long tradition of excellent events. The first INGELECTRA was in 1984 at the Universidad Austral de Chile, in Valdivia, where the event is held every even year. In the odd years other Chilean universities organize the event.

**INTERCON** is a successful series of Student Conferences being held every year in Peru since 1994. The first conference was at the Universidad Ricardo Palma in Lima, organized by students led by Luis Galloso. INTERCON XVI was held in Arequipa, Peru August 10 to 14, 2009.

Many Students from other countries of south America participate in INTERCON and INGELECTRA, the attendance at those Meetings is truly international. There are also many Student-organized conferences and Student Branches Meetings in other countries, specially in Mexico, Brazil, Colombia, etc.

The Region promotes and supports the “**RRR’s, Reunion Regional de Ramas**” (Regional Student Branches Meeting).

The first one was in Lima, Peru in conjunction with the 1997 Regional Meeting; the second in Rosario, Argentina in 1999; and the third in 2001 at the University of Sao Paulo, Brazil.

Since 2002 they are held every year in a different city. A SPAC and a GOLD Meeting are usually parts of the RRR, complementing the technical and social program of the Meeting.

#### XV. REGION 9 TODAY

On December, 31, 2008 there are 15401 IEEE Members in Region 9. 8596 of them are Higher Grade Members and 6805 are Student Members. They belong to 32 Sections, all of them active. Most Sections are grouped into 4 Councils:

##### A. Brazil Council

5 Sections: Bahia, Brasilia, Brazil South (Sao Paulo), Minas Gerais and Rio de Janeiro. A total of 2721 Members which includes 18 Fellows.

##### B. Mexican Council

10 Sections: Aguas Calientes, Centro Occidente, Guadalajara, Guanajuato, Mexico, Monterrey, Morelos, Puebla, Queretaro and Veracruz. A total of 4008 Members.

##### C. Central America and Panama Council(CAPANA)

6 Sections/countries: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. This Council has 1151 Members.

##### D. Andean Council

5 countries/sections in the northern and western part of the South American sub-continent: Colombia, Bolivia, Ecuador, Peru and Venezuela

##### E. Sections w/o Councils

There are three in the southern cone: Argentina, Chile and Uruguay, serving 1570 Members. Three more in and around the Caribbean Sea: Puerto Rico & Caribbean, Trinidad & Tobago and Western Puerto Rico, with a total of 1224 Members.

##### F. Technical Chapters

On the Technical side, there are 10177 Societies Memberships and 402 Affiliates in the Region. The total number of Technical Chapters is 171. The most popular Societies are: Computer (1639), Communications (1488), Power and Energy (1456) Industry Applications (594) and Control Systems (464)

##### G. Student Branches

Although not all of them show permanent activity, a total of 310 Student Branches and 164 Student Branch Chapters have been formed in the Region.

#### ACKNOWLEDGMENTS

It is not possible to mention all of the volunteers of the Region who have contributed to this article with their memories and recollections, sharing their personal archives, answering questions and making corrections to the manuscript.

Principal Internet sources are the Region and Section pages; they usually include history notes. The IEEE Global History Network also has information from Sections in the Region.

A short list of the principal sources, printed material and published documents that were consulted and can be used as reference for more detailed studies is as follows:

Regional Web pages, <http://www.ewh.ieee.org/reg/9>

NoticieEEeros, <http://www.noticieero.org>

“Memoria de la Region 9 IEEE” Edited by Carlos Rodriguez; Panama 1984

Personal archives of Jose Roberto Costa de Lacerda and Juan C. Miguez

“Memoria Historica de CAPANA 1982-2007” Marcos Chen; Panama 2007

“Seccion Peru 40 Años”, 2007

“40 Años IEEE Seccao South Brazil” 2006

“Proceedings of the IRE” various Issues

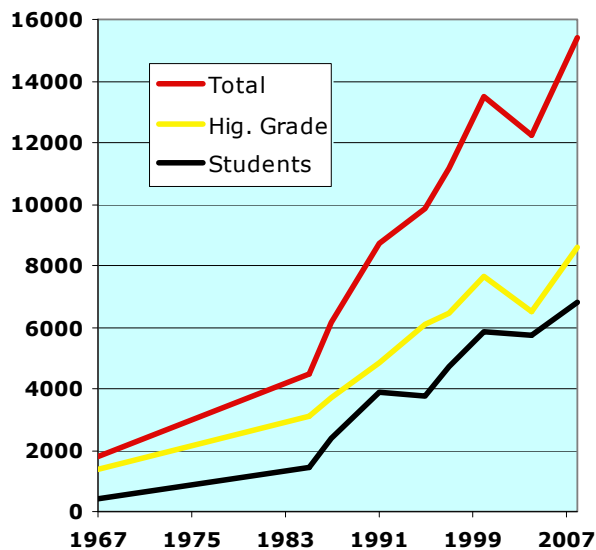


Figure 6. Growth of Membership in the Region