

## CENTRAL SUBJECTS

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Only in four capital letters is written the entrance of Peru to the advanced networks

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Why do we need advanced networks?

It will be more easy to understand the benefits that the research and education networks (NREN) bring for a society if we could explain in which ways they are contributing to become the life of all better.

It is obviously possible to justify that are strategic objectives for the development of the research and education in the region that we must conquer.

We can assure that the investment that each NREN carries through in its country for Latin American contribution through CLARA, is widely rewarded by the concrete result that the communication and contribution between professors, researchers and pupils of eight countries (1), through hundreds of institutions, provokes in the advance of the education, science and technology.

Meanwhile, as region still we represent only 0.053% of the capacity of Internet exchange between Europe and North America. This lack of relevance in the scene of a society that is already dominated by the appropriation and use of information and communication technologies (ICT), represents a great challenge for our development.

Various factors are restricting our insertion in an adequate form into this knowledge society. We have great necessities of qualified human resources for the management of ICT and its applications, and also, we suffer of a scarcity of efficient public politics to universalize the access.

This come to an end by creating a situation in which we do not have the necessary basic resources for the generation and exploitation of our rich Latin American culture. As result, we produce very little educational content culturally appropriate to our reality and necessities.

With the implantation of RedCLARA it was possible to demonstrate that another great barrier is the price and availability of connectivity for the creation of networks. There are enormous variations of price/megabit in the region, and they that don't present any relation with the costs associated with the involved technology.

However, I believe that the NREN are extremely efficient mechanisms to create overcoming conditions for these difficulties. The advanced applications that these networks make possible, have an important role in some critical areas for the incorporation of ICT in the national and regional production processes.

It is possible to mention key-applications that are characterize for taking care of a great audience of users, as in the distance education through videoconference. Another example, are the problems that represent national challenges, as the a forecast of climate and weather, or the prevention of disasters, that demand a distributed and collaborative image and data processing, and an intensive use of the networks.

Great social impact applications, as tele-health, have being used by the NREN, as in the case of the demonstration projects of the @LIS Program, between Europe and Latin America, and they prove the utility of visualization applications and its contribution for daily pre-diagnosis and second medical opinion (go to <http://www.alis-telemed.net/> and <http://www.healthcarenetwork.it>).

Through the of advanced education and research networks it is possible to create communities that share cultural contents in an extended way, as the exchange of digital videos between



Nelson Simões  
President of CLARA's Board of Directors  
Executive Director of RNP (Brazil)

(1) Welcome to RAAP-Peru and RAU-Uruguay, that in the last two months have integrate CLARA - RedCLARA expects to have 14 NREN integrated by the end of 2005.

university TV channels or the formation of school networks that generate a rich exchange of experiences based on our cultural diversity (go to <http://www.atlasdeladiversidad.net>).

Finally, the applications that traditionally create a great improvement of the local capacity in ICT are those represented by the research groups of international level that integrates themselves in collaborative projects in astronomy, physics, informatics, biodiversity, among others. With those applications, the NREN works to assist the specific necessities of the demanding requirements of the researchers.

With enthusiasm it is possible to evidence the matureness of the research and education networks initiatives in our region. Literally it is about constructing a new community of universities and of regional research groups, that plays the role of the driving force of changes. After all, many times the education organizations have been slow to embrace the innovative use of advanced applications.

We need the advanced research and education networks for their double role of qualification and induction. They create capacity through the continuous improvement of human resources specialized in the management and use of ICT. They induce the diffusion and the use of the ICTs in the society allowing an increase of the competitiveness of the organizations and the people.

It seems to be service, but it is not. Think about them as a patrimony, a public benefit, national or regional, essential for our development.

## CLARA Modifies the Image and Architecture of its Virtual Home

During the afternoon of Monday 13 of June, CLARA was changed; in its same house, was changed. Yes, because not only changed the painting of its walls and redecorated each one of its rooms, in addition its architecture was restructure. All this wasn't made for fun, but for the desire of offering a space more suitable to the necessities of each one of its members, and much more clear and pleasant to be discovered, for CLARA's friends and visitors.

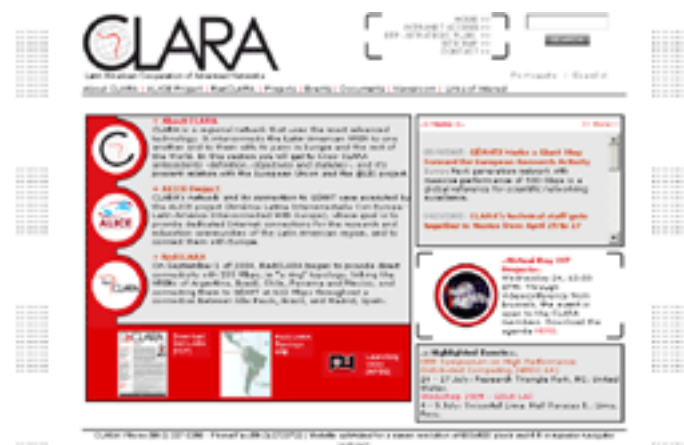
María José López Pourailly

A new design, a new contents architecture, a simpler and intuitive navigation offer, four Intranet, and the exhibition of the totality of the contents in the three languages that outline CLARA: Spanish, Portuguese, English; these are the fundamental components of this the CLARA Website. A new Website, yes, but located in its same address.

When at the beginning of this year a Plan of Public Relations and Communications for CLARA was considered and approved, one of the first established goals was the reelaboration of the Website; the necessity of giving more flexibility -in terms of contents visibility and architecture- to the Website, was imperative. If this was as urgent, so it was to demonstrate respect to the idiomatic differences that CLARA presents according to the origins of its members; this respect would only be evident if CLARA assumed in its communicational channels the Spanish, the Portuguese and English like mother tongues, the three at the same level.

The works of contents architecture and graphic design proposals were carried out between March and April. Consolidated an option, May and June were destined to the construction and complete translation of the Website contents. The result: a Web designed in three levels (corresponding to the three indicated languages), with the same contents, disposition and graphic; of easy navigation and express access to its contents.

In a dramatic parenthesis, only to tempt you to visit the new pages of [www.redclara.net](http://www.redclara.net), we will evoke the words with which the 4 of November of 1963, John Lennon spoke to the public at the Royal Variety Performance in London: "Will the people in the cheaper seats clap your hands? All the rest of you, if you'll just rattle your jewelry".



RAAP

# Only in Four Capital Letters is Written the Entrance of Peru to the Advanced Networks

María José López Pourailly

On April 7<sup>th</sup> of 2005 the connection between RAAP and CLARA took shape, twelve days later the news were widely celebrated by the members of the Latin American Cooperation of Advanced Networks. But for this to happen, a history had to be lived and written; one in which the search of integration was the guiding force.

## Page zero

1985 RAN. The world was surprised with the starving in Africa and all of us sung as a choir "We are the World", UNESCO gave to Venezuela the bitter World-wide Prize of Illiteracy, Chile and the world of infantile Literature said adieu to Marcela Paz, and as if the sadness were not enough, the Armero disaster of the Nevado del Ruiz became engraved in the hearts of Colombia, Latin America and the world, submerging them in pain and impotence. The world was not described indeed like in the novel of George Orwell (Orwell 1985); things felt shady in short whiles, but for reasons barely different to the technologization and technocratization of human race. And about technology, in that year the following landmarks in the history of Internet were marked: The NSF (National Science Foundation, the United States) began to develop its new T1 backbone to be known as NSFNET (that would be consolidated in 1988), and it was recognized the existence of several IP networks: ARPANET (50Kbps), CSNET (56Kbps), NSFNET (T1 - 1.544Mbps), in addition to certain satellite and radial connections, scoring a total of 1961 Hosts.

And where to is pointing as much history? Good, we said that year 1985 was running and...

## Page one

... and "in Peru people dreamed about the integration to the Bitnet network, ambition fairly difficult to obtain because of the high cost that this project represented for the institutions interested in obtaining it", remembers Joaquin Guerrero, President of RAAP. Not only that happened in the Incas land, in the second half of the '80s Peru carries out the first experiences of integration between universities, and it is created the PerNet project, whose first stage considered the connection between the Pontifical Catholic University of Peru and the National University of Engineering; they worked with IBM series 4300 mainframes equipment.

April 19<sup>th</sup> of 2005, an email awakes the cheering of the CLARA members. In a new contact the Captain of the intrepid crew of the CLARA NEG spaceship, Eriko Porto, indicates that the connection of the Peruvian Academic Network, RAAP, to the backbone of RedCLARA has been already established. The cyberspace is flooded of messages that congratulates RAAP for the great event, and while the president of the Peruvian network, Joaquin Guerrero, gives his thanks to Captain Porto's crew, and dreams about the enormous possibilities and the challenges that will carry this new connection for Peru, from Uruguay, its pair in RAU, Ida Holz, condenses in two lines the sensation of all the CLARA members: *"This project, extensively dreamt by many of us, is on its way to become a reality for all Latin America united!!!"*. By those days Ida didn't know that Uruguay would celebrate the same event by June 6, but for a while this subject will stay in suspense, because here, in these lines, the invitation is to know the solid story that is tiled behind the connection of Peru; we talk about the genesis of RAAP, and more than its roots, its present, dreams and ambitions.



Then, at beginning of the '90s, Peru concentrates its efforts in the creation of the Peruvian Scientific Network (RCP), which -with academic and research purposes- it pursued the electronic integration of universities, institutes and research centers. But the intentions and the efforts were not enough to resist the commercial character adopted by the Internet, and the mentioned institutions watched inwards of their classrooms to concentrate themselves in individual technological efforts that did not consider the electronic integration with their pairs.

The dream of a Peruvian network was suspended in the air.

## Page two

Year 2002 arrived, and given that we spoke about dreams, lets mention the one of the integration of a Latin American advanced network. This old dream of the LA community was feeded by the European Commission by financing the CAESAR study that was irrefutable in its conclusions: the establishment of a Latin American advanced network and its direct connection with Europe was not only necessary, but also technically and economically feasible. With the wind blowing in favor and the greater expectations, in the framework of the @LIS Programm began the development of the ALICE project and in Latin America the advanced network concept was synonymous of CLARA.

Peru was and is part of this dream since the beginning. But lets talk about "was", to indicate that the conception of RAAP as a project occurred in the period of CAESAR. In what ALICE and CLARA concern, Joaquin Guerrero remembers that "one of its objectives was the union of the national research and education networks (NREN) of the Latin American countries and the Caribbean. In Peru the idea found echo between several institutions, which conformed the Peruvian Academic Network or RAAP, that was officially created the 30th of April of 2003 and, months later, in the city of Mexico it signed, like an institution already constituted, along with other 16 countries, the statutes of CLARA".

## Page three, the present

RAAP is an initiative of national reach; it groups public and private institutions, and it is oriented towards the development of the academic networks in Peru. "We look for the

implementation of an architecture of connectivity of last generation and high speed, that makes possible the development of research activities, teaching and exchange of information, in a much more efficient way", states the RAAP president.

The main target of the Peruvian network, according to what Guerrero indicates, "is to integrate the researchers and to be the scenario in which they carry out their activities, by allowing them to share resources and applications. The present and future university networks and research centers of all the country, will be integrated to RAAP in the future".

Now, while this goal takes shape, obviously it is better to take one step at the time, and at this point RAAP decides to integrate in a first stage only those institutions that are placed in the capital. In this way RAAP has managed to build up its network in fast and efficient way, "later integrations will be done more rapidly on the basis of the knowledge achieved with this initial effort", trusts Joaquin Guerrero and nothing take us to doubt his confidence, because the acquired knowledge will guarantee their work at the time of obtaining the national reach that RAAP intensely and such in a justified mode, seeks.

Today RAAP lives the testing period of the connectivity between its member institutions, this will allow the Peruvian network to make specific the integration of other organizations dedicated to education and research in Peru.

## Joaquín Guerrero Rodríguez, the RAAP man A President who Dreams Big and Concrete

María José López Pourailly



If something defines the relation of Joaquín Guerrero Rodríguez with the institution that he presides, The Peruvian Academic Network (RAAP), that something is the word communion. Understand this concept as the close association between future visions, development, ambitions to take his country by means of the knowledge to the highest spheres, love and commitment. In order to say it in a simple way, if tomorrow Joaquín Guerrero, in a madness fit, declares to the press that he is not interested in the development of RAAP and the insertion of Peru in the world of the advanced academic networks, I would have to call him liar. But don't we get excited, possibilities that that happens, do not exist, not a single one.

Let's get familiar with Joaquín Guerrero and his individual commitment, through the following lines.

**DeCLARA: Which is the fundamental importance of RAAP for Peru?**

**Joaquín Guerrero R.:** The Peruvian Academic Network represents a project of great importance for the country in several senses; in the first place it represents the integration of many different institutions, that's an achievement. RAAP is constituted by national universities, state universities and research institutes; organizations who -leaving of side natural particular interests- have decided to bet for the union in the search of a common well-being and, therefore, of the country. On the other hand, we see the implementation of RedCLARA, as the beginning of operation of an instrument that will allow the interaction between the academic and research institutions, which will allow the development of joint projects, and to define projects with foreign organizations, everything which will allow a healthful technological transfer, unquestionable source for the development of the nations.

**Which are the greater challenges that RAAP faces today?**

The network has been implemented with the aid of some of the main universities and research centers of the country, all of them with operation centers placed in the capital. This was

### RAAP Members

RAAP has been initially conformed by institutions of Lima (capital of Peru), five of the most important Universities of the country and two institutes of research:

**National universities:** U. Nacional Mayor de San Marcos, U. Nacional Agraria La Molina, U. Nacional de Ingeniería.

**Private universities:** Pontificia U. Católica del Perú, U. Peruana Cayetano Heredia.

**Institutes:** I. Peruano de Energía Nuclear - IPEN, I. Nacional de Investigación y Capacitación de Telecomunicaciones - INICTEL.

RAAP hopes to begin this year the decentralization of the network, that's why it will invite the following Universities of the interior of Peru, to be integrated to the available research and education network: U. de Piura (Piura), U.N. Pedro Ruiz Gallo de Lambayeque, U.N. Jorge Basadre (Tacna), U.N. San Antonio Abad del Cuzco (Cuzco), U.N. de la Amazonía Peruana (Loreto), U.N. San Agustín (Arequipa), U.N. del Centro del Perú (Huancayo), U.N. de Cajamarca (Cajamarca), U.N. San Cristóbal de Huamanga (Ayacucho), U. Antenor Orrego (La Libertad), U.N. de Tumbes and U. Católica Santa María (Arequipa).

In addition, today RAAP waits for the integration of other Universities and institutes, of the capital and abroad, that already showed their interest in making use of the services that RAAP will offer to the Peruvian scientific and academic community: Centro Internacional de la Papa, I. Geofísico del Perú, U. Particular San Martín de Porras, U. Peruana de Ciencias Aplicadas, CENTRUM Católica and ESAN, among others.

a strategic decision oriented to obtain a fast implementation; nevertheless, we are working on a project of national reach. To build a network that will cover all the territory of our native country, is one of the greatest challenges that we are facing.

If it is requested to me to refer a second challenge, I would mention the necessity to define projects that are going to make the maximum use of the created infrastructure. There are in portfolio many subjects of great importance, and it is necessary to take them to practice, this implies a concerted effort from those who we are in the project of creating national networks of R&D: RAAP, the network mother -that is to say, CLARA, that has between its tasks the creation of a data base of projects that has to unite all the countries of the region; and, finally, the organizations, that will have to look for strategic alliances with compatible organisms to define joint projects that promotes the technological development, that is so necessary for our countries.

**What importance has for RAAP and the Peruvian scientific and academic communities, the connection to RedCLARA and the participation in CLARA?**

I answered partially to this query in the previous question; let's go deep in the subject. CLARA has assumed a chain of responsibilities and challenges oriented not only to the development of physical networks in the countries of the region; it has accepted, also, the mission of identifying projects and to present them to the nations of the region that conform the Association. That is to say, CLARA looks for a regional integration between countries that are not only twinned through a common past, but also through a similar culture, with similar problems, in greater or smaller degree. CLARA causes the regional development, the fusion of identities through the communications. Peru, Colombia, Chile, Ecuador, Guatemala, etc., are countries with similar histories, cultures and idiosyncrasies, CLARA can unite them by the technology.

**In a personal level, which do you consider are the real benefits of integrating CLARA and to be part of its network?**

CLARA makes feasible what all technicians or researchers desire, that is the exhibition of their projects, and the integration with technicians and researchers with compatible interests, with those who it is possible to share and to increase abilities and knowledge. We all get benefited: our institutions, ourselves as professionals and mainly our countries, whose well-being and development are, in the long term, the central objective of our efforts.

**Outside the CLARA context, what do you ambition for the future development of RAAP?**

The growth of the institution in terms of capacity and possibilities of services, the integration of the greater amount of academic and research organizations, the establishment of new relations with organizations, as much of those that are located in the region as those that are beyond of our edges, and the maximum exploitation of the possibilities that RAAP offers.

**And within the CLARA frame, what do you yearn for RAAP and Peru within this pan-Latin American network?**

The Peruvian network is one of the first networks that initiate activities within the framework of CLARA. RAAP begins with humility but with great ambitions. We look forward to favor our development, nourishing us with which the electronic integration with the world and specifically with the region can give us, nevertheless, we have initiatives that we think, can represent interesting possibilities for the networks that integrate CLARA. We also would like to play an active and leading role in the growth of the regional network.

**Do you identify in Peru one or more examples of applications and/or projects that are being developed and are benefited with the connection to RedCLARA?**

The Pontificia Universidad Católica del Perú has diverse projects, one of most important implies a strategic alliance with the GDLN, the same one that would be made at CLARA level. Being the representation of GDLN in this University, already a program of use of the network for courses offered by the GDLN is being designed. Another project in implementation in the PUCP is the creation of an Access Grid.

Today the universities are led to make use of the numerous agreements of research that they have with universities and organizations of diverse parts of the world, and that requires of the use of advanced networks.

**If it was up to you, what project would you impel immediately in CLARA?**

There are many projects of great scientific and educative importance coming to my mind, nevertheless, and trying to be original, I must mention that I have a great interest by those subjects related to the role that the ICT plays in the development of the countries. This interest could impel people to describe me as technocentrist, by my perception: nowadays the technology represents for the society the motor of change. I think that the effective use of the ICT generates a spiral growth that brings with itself the well-being and the prosperity of the nations. In this sense I would impel the creation of regional research groups devoted to study the economy of the knowledge, in search of lights about the influence of the ICT on the economic transformation in Latin America and the Caribbean, the results would have to cause regional policies that take us to the development of projects that should exploit to the maximum the technological strategies like the one offered by CLARA. That is to say, a sort of "meta-project".

**Beyond the aspects merely technical, how would you define CLARA?**

It's a regional integration organization. Its constitutes the first serious effort to create a network that aims at unifying the scientific and academic communities of the countries of Latin America and the Caribbean, making use of the possibilities that the advanced communications technologies provide to us today. Clearly, the final mission is the technological development of the region and the consequent well-being of our countries.

**Finally, faced to the launching of RAAP in August, which is your greater ambition with respect to the network that you lead?**

The launching of the RAAP means our formal presentation in society. Many words about RAAP were spoken but nobody had a clear idea of when it would begin to work. We did not much effort either to create expectations that could not be covered, because one of the most complex tasks during the organization of a plural association, is to obtain consensuses, nevertheless these occurred and we saw the true birth of RAAP. In August or beginnings of September, with a strategy of services and a strategy for the integration of new users already defined, we will formally expose RAAP to the world, then we will start to work to get to constitute RAAP as the national research and education network based on advanced networking of Peru.



## RedRAAP

# The Spinal Cord of the Peruvian Academic Network

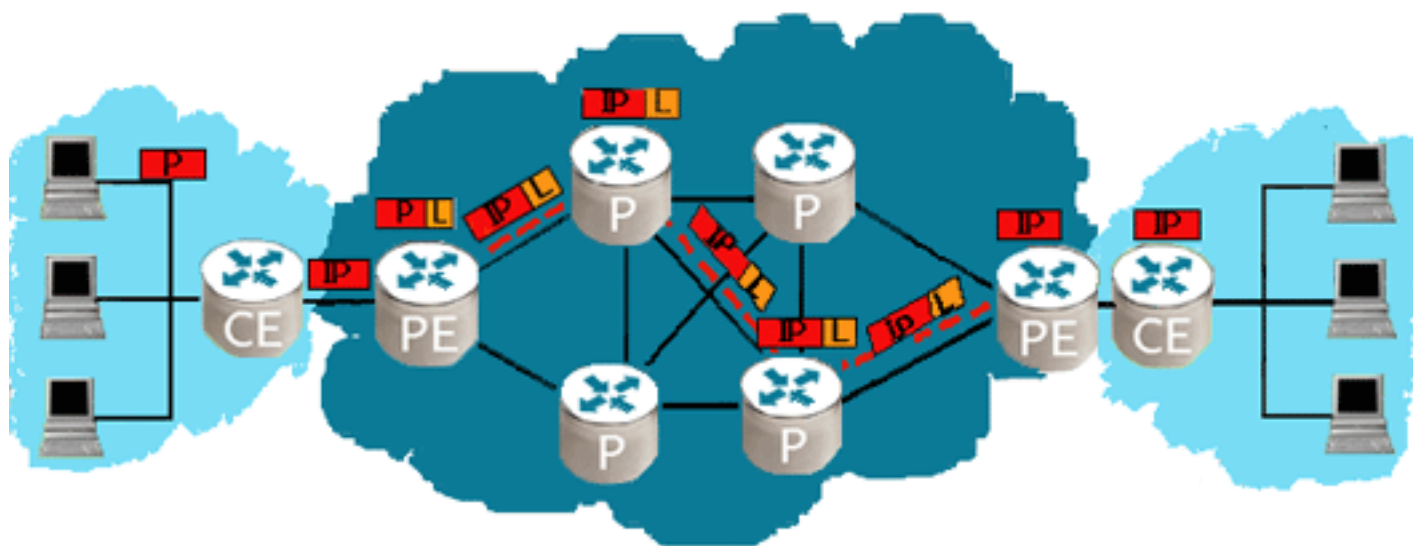
Gauze, iodine, bistoury. Pulse? Perfect, the conditions are the optimal ones, we come to the incision. Famous colleagues and surgeons of the networks, we begin here to explore the spinal cord of the column that sustains each and every one of the interchanges that RAAP makes through its network. It is not necessary that you dress your aprons, in this incision none of us will see a single drop of blood.

María José López Pourailly

Of the IBM series 4300 mainframe equipment, that used Peru in 1985 to get inserted in the world of Bitnet, only is left the memory. Today the technologies and the capacities of interchange and storage are others, in short, these are other times, of course, another century. After this "clarifying" short speech, let me introduce you with the specialist Joaquin Guerrero Rodriguez, who will manage the task of sectioning the backbone of RedRAAP to explain us about its constituent parts, its general composition, architecture and operation. I invite you to take note, please ahead professor Guerrero:

At the present time, the architecture of RedRAAP corresponds to a MPLS (MultiProtocol Label Switch) network, conformed in its interior by P routers (Provider) and of border routers MPLS, called PE routers (Provider Edge). The of border Routers receive the IP packages from each one of the RAAP member institutions; they analyze and install them a label called FEC (Forwarding Equivalence Class). This new structure of labeled data, is transported by the P internal router, after the analysis of the table of commutation created in advance.

Architecture of the RAAP Backbone (MPLS Network)



In RAAP the MPLS Technology allows its immediate availability in the use of the IPv6 protocol. As a test mode, since more than six months ago RAAP has a network with IPv6, the first one in being implemented in Peru.

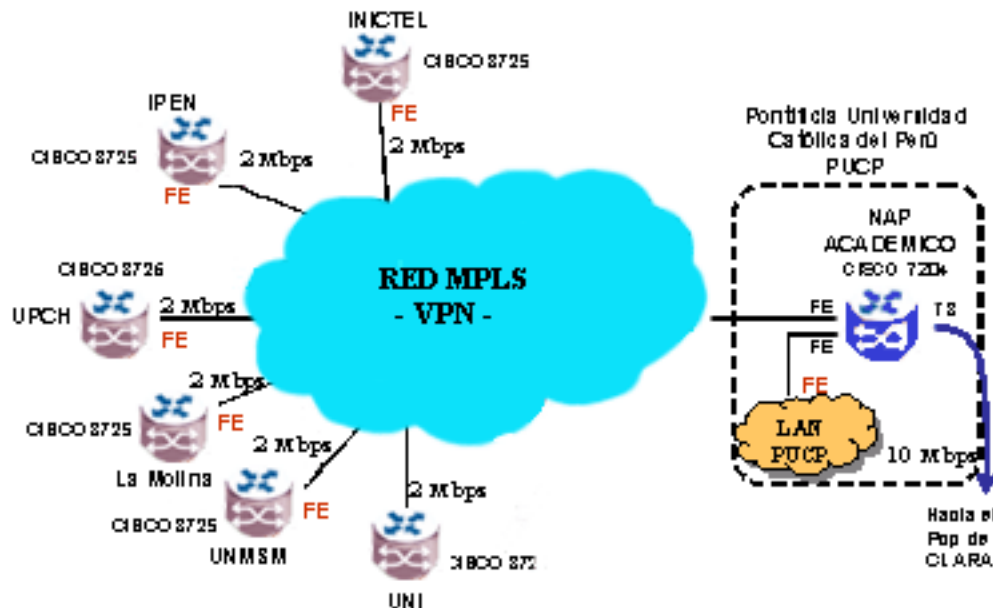
### RedRAAP Topology

The institutions that are members of RAAP are connected to RedRAAP through a Cisco 3725 router. These routers contain a FastEthernet card (100Mbps) to connect each LAN to RedRAAP, although in this first stage its settled at 2Mbps. In each one of the RAAP members institutions there is an optical access to the MPLS network, which offers them a growth of greater bandwidth.

RedRAAP has access to RedCLARA through a Cisco 7204 head router, that was installed on April 7<sup>th</sup> of 2005 in the campus of

the Pontifical Catholic University of Peru (PUCP). This router it has a Dual FE card (100Mbps), that connects one of its interfaces to the PE router of the MPLS network of Telefónica, and the other to the PUCP LAN. In the connection with RedCLARA, this router it has a T3 (45Mbps) interface, connected to the RedCLARA Pop in Chile, by means of the connection that Global Crossing (GC) offers. Thirteen days later the BGP (Border Gateway Protocol) was activated in the head router of RedRAAP; an independent number (AS) was assigned by Telefónica of Peru.

## RedRAAP Topology



### LAN Network of the institutions members of RedRAAP

The LAN networks of the institutions that integrate RAAP are connected to the head of RedRAAP by a Cisco 3725 router, with FE Dual interface (100Mbps). In this first stage of connectivity, RAAP counts on a bandwidth of 2Mbps for each one of the member institutions, and for the next months its projected its growth to 10Mbps for each link.

To this first stage of interconnection of RedRAAP there is a C class "sub netted" direction with a mask 255.255.255.240, which allows to assign to each LAN, 14 IP directions for its connection to RedRAAP. When the generation of traffic in the LAN networks starts to increase and the necessity of more points of connectivity begins to be irrefutable, a public C class direction will be assigned to each LAN. Today the native protocol in RedRAAP and in RedCLARA is IPv4, but when in RedCLARA the migration towards IPv6 begins, RedRAAP will be prepared to evolve to this protocol immediately.

Finally, we must indicate that in each LAN there are two possibilities so that the researchers interconnect themselves to RAAP. The first one it is to consider in each institution a LAN network parallel to the present network; the second, is to use the same already existing infrastructure in each LAN network by grouping the user-researchers in a VLAN of R&D and establishing politics of restriction in the exit router, to filtering and differentiating the commercial Internet traffic of the academic one. In both cases it is necessary that each institution counts with a connection to the MPLS network of RAAP and another one to commercial Internet.





## Honduran Network RHUTA was Created

On April 25 the principals of the public and private universities of Honduras, in conjunction with the representatives of state and international institutions of telecommunications, created the Honduran Network of Universities with Advanced Telecommunications (RHUTA). To date UNITEC had represented Honduras in CLARA, but now, from its creation, RHUTA occupies this position in the Latin American Cooperation of Advanced Networks.

María Alejandra Lantadilla Budinich

The meeting was carried out in the Universidad Tecnológica Centroamericana (UNITEC) and it was presided by the Headmistress of the institution, Norma Ponce de Sánchez. The Vice-president of the Republic, Vicente Williams; several university authorities of the country, civil employees of the telephone company HONDUTEL, the Commission of Telecommunications of Central America (COMTELCA) and members of the International Union of Telecommunications (UIT), attended to the event.

The Headmistress of UNITEC, Norma Ponce de Sánchez, said that for two years, and representing Honduras, the institution has been participating in the creation of the new Network, with the firm intention of integrate the country to a world-wide information network, with virtual libraries, teleconferencing and other telematic applications, that allow the technological and of knowledge transference.

At the middle of the present year Honduras will have connectivity with RedCLARA so that the students, professors and investigators, obtain the direct communication with their homologous ones of the Latin American, European and North American nations. Misses Ponce de Sánchez also explained that the connectivity not only reduces the breaches of access to the knowledge between the developed and underdeveloped nations, but that in addition increases the opportunities so that Honduras improves its competitiveness.

## Colombia Sums Advance in CLARA

Through the National Academic High Speed Network (RUNAV), Colombia does integrates to RedCLARA thanks to Connectivity Agenda of the government of this country whose mission is to facilitate to the universities its interconnection at high speed with more than 700 institutions of superior education and research centers of America and Europe.

María Alejandra Lantadilla Budinich

The Executive Director of CLARA, Florencio Utreras, congratulated the Connectivity Agenda by "the enormous advance made after the creation of the National University Network of Colombia". The Connectivity Agenda of Colombia has destined vast resources for the interconnection of the regional networks and the connection to the international advanced networks.

Recently, the Minister of Communications, Martha Pinto de de Hart, its pair of Education, Cecilia María Vélez, the Vice-minister of Education, Javier Botero and the Director of the Connectivity Agenda, Hemán Moreno Escobar met with the directors of the Colombian universities to give beginning to the National Academic High Speed Network (RUNAV) that will have to be connected to RedCLARA by the end of this month.

The institutions of education superior and research centers that are connected to RUNAV and, therefore, to CLARA, will be able to use services and tools of new generation in their processes of research and education, such as virtual laboratories, digital libraries, scientific and technological centers of virtual education, high resolution videoconference, scientific and technological instruments that do not exist in the country, participation of some world-wide advanced research equipment, among many other alternatives.

At the moment there are four formally constituted regional research and education advanced networks in Colombia, that is to say: the one of Cali (RUAV - Red Universitaria de Alta Velocidad del Valle del Cauca), the network of Bogotá (RUMBO - Red Universitaria Metropolitana de Bogotá), the network of Bucaramanga (UNIRED - Red Universitaria Metropolitana de Bucaramanga) and the Red Universitaria de Popayán (RUP), Popayán.





## Through REDUNIV Cuba Makes its Entry to CLARA

On April 30 of 2005 Cuba entered to CLARA like partner. The allegiance request was presented through the Ministry of Superior Education , in it the National Education and Research Network of Cuba (RedUNIV) -by means of the Vice-minister Eduardo Cruz González- declares to know the CLARA statutes and to adhere to its principles and objectives.

In the letter of request sent on April 25, RedUNIV recognizes "the efforts of CLARA oriented to combine the interests of the Research and Education Networks of Latin America and the Caribbean", and highlights "their objectives of obtaining the establishment of a regional infrastructure that interconnects the networks of the different countries through its backbone RedCLARA".

María Alejandra Lantadilla Budinich

RedUNIV has direct links to more than 10,000 computers connected in mesh, they belong to different national organizations: health centers, medical research centers and medical universities (INFOMED), cultural centers and the University of Art (CUBARTE), and the network of Pedagogical Universities of the Ministry of Education (MINED).



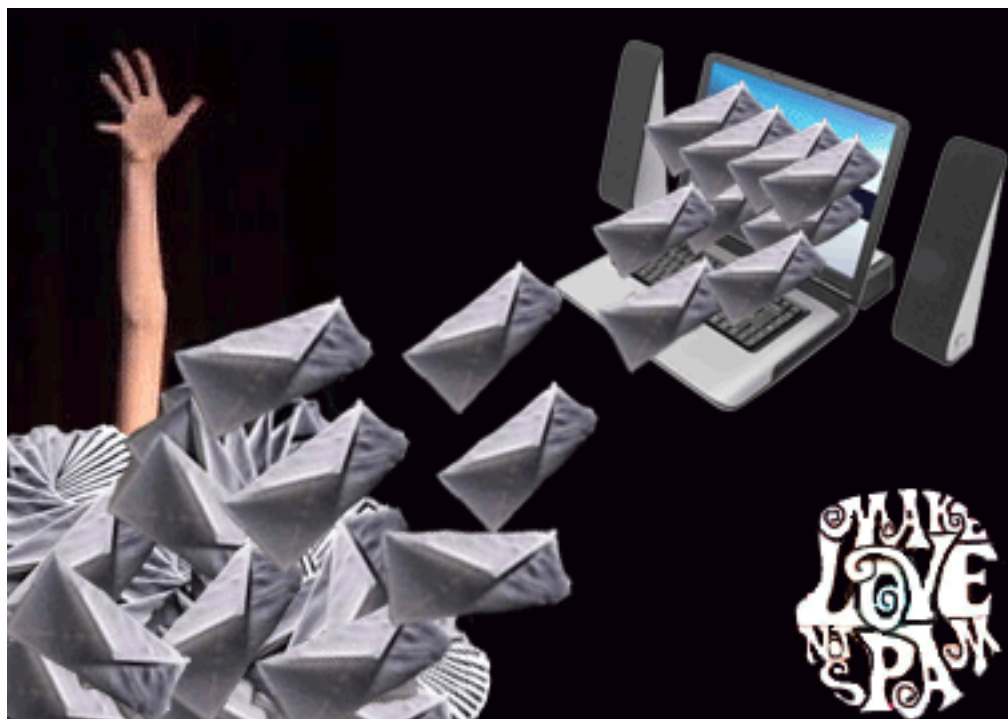
At the moment the capacity of the central node of Cuba is of 8 Mbps, and it is planned to elevate it to 20 Mbps by the end of this year. Also, it is contemplated the use of IPv6 in dual stack in the backbone of the network, for it RedUNIV had been working since the year 2004 (<http://www.6ip.cu>).

RedUNIV began to operate on March of 2005; it is integrated by 16 universities, four research centers of national character and three mountain faculties (Facultad de Montaña). That is to say:

- Universidad de Pinar del Río "Hermanos Saíz" (UPR)
- Universidad Agraria de La Habana (UNAH)
- Universidad de la Habana (UH)
- Instituto Superior Politécnico "José Antonio Echeverría" (ISPJAE)
- Universidad de Matanzas "Camilo Cienfuegos" (UMCC)
- Universidad Central de Las Villas (UCLV)
- Universidad de Cienfuegos "Carlos Rafael Rodríguez" (UCF)
- Sede Universitaria de Sancti Spiritus "José Martí" (SUSS)
- Universidad de Ciego de Avila (UNICA)
- Universidad de Camagüey (UC)
- Centro Universitario de Las Tunas (CULT)
- Universidad de Granma (UDG)
- Universidad de Holguín "Oscar Lucero Moya" (UHOLM)
- Instituto Superior Minero Metalúrgico de Moa (ISMMM)
- Universidad de Oriente (UO)
- Universidad de Guantánamo (CUG)
- Centro Nacional de investigaciones Científicas (CINC)
- Instituto de Ciencia Animal (ICA)
- Instituto Nacional de Ciencias Agrícolas (INCA)
- Centro Nacional de Sanidad Agropecuaria (CENSA)
- Facultad de Montaña de San Andrés
- Facultad de Montaña de Los Lirios
- Facultad de Montaña del Escambray

# RedIris, REUNA, RETINA and RNP won FRIDA 2005

The project "Security in the communications: a Quality Platform in the Service of Electronic mail", developed by RedIRIS (Spain) and the Latin American networks RNP (Brazil), RETINA (Argentina) and REUNA (Chile), was one of the 15 selected by the Regional Fund for the Digital Innovation in Latin America and the Caribbean (FRIDA). Its objective: to create a collaboration scene that allows to improve the quality of the electronic mail for the Latin American Academic Community.



With the support of the FRIDA program, "Security in the communications: Quality Platform in the Service of Electronic mail" will lay the foundations to establish a platform of interaction and collaboration that will not only serve to work in solutions of electronic mail, but that also to approach other subjects related to the communications through the Net.

For academics and researchers, the electronic mail is one of the most utilized tools for information exchange, nevertheless, it has become an instrument that generates enormous distrust for being constantly attacked by badly forms of use. These are: the massive propagation of virus, massive diffusion of false alarms (hoaxes), the saturation of personal and corporative inboxes or servers because of the use of Mail Bombers, and the indiscriminate delivery Spam.

The project, that will benefit operators, universities and institutions of the Latin American and the Caribbean academic environment, will begin the first of July (with date of term marked for the 30 of June of 2006) as a permanent protection

for the safe interchange of electronic mail. And how not, if its central objective is to define a platform of collaboration that allows to improve the quality of the electronic mail in the Latin American academic community, by means of a forum of communication interchange on the problems of security of the electronic mail, established between the different academic institutions from Latin America and the Caribbean. This will be translated in the construction of new benefits of added value based on this service.

The specific objectives of the project are to implement collaborative work tools for the development of the project and its continuity in the time, that allow a flowed interchange of information between the participants. In addition it is pursued to establish models of Electronic mail Services, to implement a Model of Evaluation and Tracking of this service, and to evaluate strategies of implantation of in Net Sensors Models for security problems and new protocols like SPF (Sender Policy Framework), and even to prove or define a model of interchange of IPv6 traffic.

All the activities of the project will be made with the collaboration and the technical support of REUNA (Chile) and of the Spanish research network RedIRIS, which next to RNP (Brazil) and RETINA (Argentina), developed the project to which later other academic networks of the region and any institution that wishes to improve the quality of its service of electronic mail, will be able to integrate.

The 15 proposals of investigation selected by FRIDA -of a total of 357 initiatives- belongs to organizations from Argentina, Bolivia, Brazil, Chile, Colombia, Mexico, Nicaragua, Paraguay and Uruguay; who will receive a total amount of US\$ 174,000, contributed by the convoking organizations (Pan Americas /IDRC, ICA and LACNIC) and by the ISOC and the GKP.

More information: <http://programafrida.net/sp/proyectos2005.html>.



María Alejandra Lantadilla Budinich

Europe

# The Holy See Connects to Research and Education Networks Through GARR and GÉANT2

Thanks to the recent 100 Mbps direct connection to the GARR network, the Holy See is now linked to the pan-European GÉANT2 network, making available a vast and diverse array of resources to students and researchers worldwide.

Federica Tanlongo

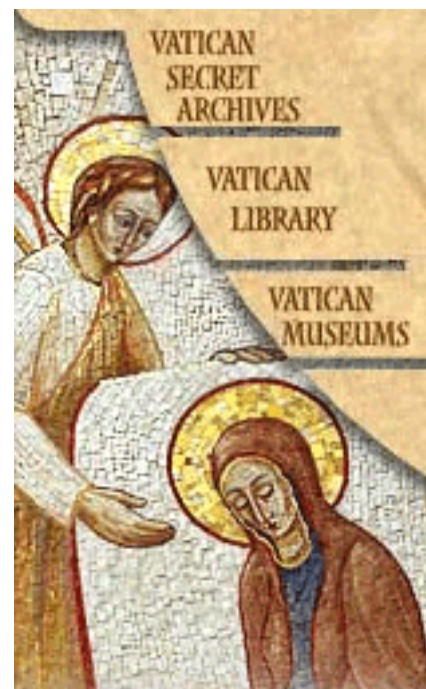


Thanks to the recent 100 Mbps direct connection to the GARR network, the Holy See has become an integral part of the worldwide system of Research and Education Networks. The Italian GARR network is connected to the pan-European high-speed internet backbone, GÉANT2, which seamlessly connects R&E networks across the continent and provides links to non-EU countries through the implementation of several international interconnection projects.

This connection will provide an important link between the worlds of science and knowledge and the wider Church, not only in Europe, but in Latin America, South Africa, the Asia Pacific region and the Middle East. On one hand, it is likely to promote openness and accessibility to the Priesthood, Holy Orders and the Church hierarchy and to foster inter-faith dialogue between different world regions and cultures; on the other hand, it will make an important contribution to the spread of cultural and theological knowledge globally.

Through this direct link, the entire Church heritage of spiritual, historical, artistic and cultural resources will be readily available for students, teachers and researchers across Europe and worldwide. The Vatican Libraries, Universities and other documentation facilities will be made easily accessible to the research and education community, in both clerical and secular institutions. The link will provide an important enhancement of the already prominent role of the Vatican in cultural and world affairs.

Moreover, the combination of high bandwidth and reliability provided by the GARR and GÉANT2 networks, together with the specific expertise of the Holy See Internet Office will make it possible to deliver, via video streaming, a number of live events of interest to a worldwide audience. It will also allow the use of techniques such as distance-learning and videoconferencing to enhance and expand the Church's teaching and communication infrastructure.



# Awards

# Grants

CYTED 2005 Actions  
<http://www.cytcd.org/>  
 Date of closing: August 15th, 2005.

L'ORÉAL-UNESCO Award  
[www.loreal.com/loreal-women-in-science/index.html](http://www.loreal.com/loreal-women-in-science/index.html)  
 Date of closing: August 15th, 2005.

## Agenda

### June:

27 - 30: LACNIC VIII  
<http://lacnic.net/sp/eventos/lacnicviii/index.html>  
 Lima, Peru.

27 - 30: 14 International Scientific Congress CNIC 2005  
<http://www.cnic.edu.cu/14Congreso/Bienvenida.htm>  
 La Habana, Cuba.

### July:

4 - 5: Workshop 2005 GDLN IAC  
[http://alc.gdln.org/noticias/taller2005/Feria/Feria\\_home.htm](http://alc.gdln.org/noticias/taller2005/Feria/Feria_home.htm)  
 Swissotel Lima, Lima, Peru.

6 - 8: e-Science in Spain Conference  
<http://www.fecyt.es/e-ciencia/index.htm>  
 Spain.

14 - 17: 3d International Conference in Education and Information Systems: Technologies and Applications  
<http://www.confinf.org/eista05/website/default.asp>  
 Florida, United States.

14-17 : III International Congress of Systems Engineering (ICSE-PERU)  
<http://www.ucv.edu.pe/icse/>  
 Trujillo, Peru.

17 - 21: ACUTA 34 Annual Conference and Exhibition  
<http://www.acuta.org/relation/downloadfile.cfm?docnum=446>  
 Kissimmee, Florida, United States.

24 - 27: IEEE Symposium on High Performance Distributed Computing (HPDC-14)  
<http://www.caip.rutgers.edu/hpdc2005/>  
 Research Triangle Park, NC, United States.

25 - 29: VII Workshop of Network Technologies for Latin America and the Caribbean WALC  
<http://www.walc2005.ula.ve/>  
 Merida, Venezuela.

28 - 29: First Annual Meeting of the ALICE Project  
<http://www.redclara.net/05.htm>  
 Antigua, Guatemala.

29 Jul. - 2 Ag: SIGGRAPH 2005  
<http://www.siggraph.org/s2005/>  
 Los Angeles, CA, United States.

### September 2005

19 - 22: Fall 2005 Internet2 Member Meeting  
<http://events.internet2.edu/2005/fall-mm/calls.cfm>  
 Philadelphia, United States.