De CLARA

RedCLARA
Cooperación Latino Americana de Redes Avanzadas

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TICAL2018 and 2nd Latin American e-Science Meeting: Back to Cartagena!

RedCLARA and RICAP sign agreement to create cooperation mechanisms

Chile inaugurates the first stretch of its high speed optical network

Cooperación Latino Americana de Redes Avanzadas

Red CLARA
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A clear path for your data
We empower your research and developments

Edition
María José López Pourailly

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Red CLARA

Editorial

María José López Pourailly

Communications and Public Relations Manager

RedCLARA

Since the first edition of our DeCLARA, in April 2005, we have undergone many changes. Some of them were just external, just "makeup", like the six different graphic designs that this bulletin has had during these 13 years. Others, however, were fundamental. And it's because of these and all those years in charge of producing this newsletter - the first in the digital magazine format among the advanced networks environment - that I took the decision of writing this editorial, the first one written by its editor in all these years.

Since its inception, RedCLARA has experienced great and brilliant moments, such as the success of the infrastructure projects ALICE and ALICE2, that gave birth to our backbone, its collaborative projects -ELCIRA and MAGIC-, and the approval of the BELLA programme and all that it will bring not only to Latin America but also to the cooperation of our continent with Europe and the rest of the world. We have also experienced difficult times, especially with regard to the financial aspect; how many times have we sweat with the word 'sustainability'!. More recently, we also had the departure of some important members of this family with continental dimensions: Florencio Utreras and Carmen Gloria Labbé, who were Executive Director (since the formation of the Latin American Cooperation of Advanced Networks, until June 2017) and Deputy General Manager (2011-2017), respectively. Yes, we have lived ups and downs, but we have always left those "downs" with a renewed strength and a great desire to grow and fight for intercontinental and transcontinental collaboration.

Much of that strength and of the value that we give to change is reflected in these pages, and it would be impossible to have something different when we see the new spirit that Luis Eliécer Cadenas, our Executive Director since August 2017, brought to the organization. Seeking to reflect this new moment, we face the mission of renewing our brand and modernizing our website, not only with regard to what is aesthetic, but mainly in what concerns to our speech, vision and recognition of the content needs of our members. This is one of the most transversal issues in this edition of DeCLARA.

New alliances, the sustainable growth of our backbone and use cases that reflect how the capabilities of RedCLARA and its member networks are effectively offering development opportunities for science and collaborative work in our region, are some of the themes we want to share with you through this bulletin.

I would also like to highlight the material on TICAL2018 and the 2nd Latin American e-Science Meeting that will take us back to the wonderful Cartagena, in September. Meet William Confalonieri and Martin Hilbert, two of the international speakers invited to share their experiences on digital transformation within the university and sociopolitical framework.

So we started the year 14 of DeCLARA, with winds of change and renewal, with new goals and dreams, and above all with you, with you all! Thank you! Thank you to everyone for all these years, thank you for always accompanying us on this high flight that is our scientific, technological, educational and innovation communities in Latin America.

In continuous evolution

RedCLARA introduces its new brand image and website

Luiz Alberto Rasseli

Almost 15 years have passed since the creation of the Latin American Cooperation of Advanced Networks, RedCLARA, during this period the network advanced in its mission of strengthen the development of science, education, culture and innovation in Latin America through the innovative use of advanced networks and consolidated as institution. In this context, RedCLARA's growth must be reflected in the evolution of its institutional brand and website, in accordance to the advances of technology and the events that marked the institution's history.

2004 - 2005

2005 - 2010

2005 - 2010

2011 - 2018

2018

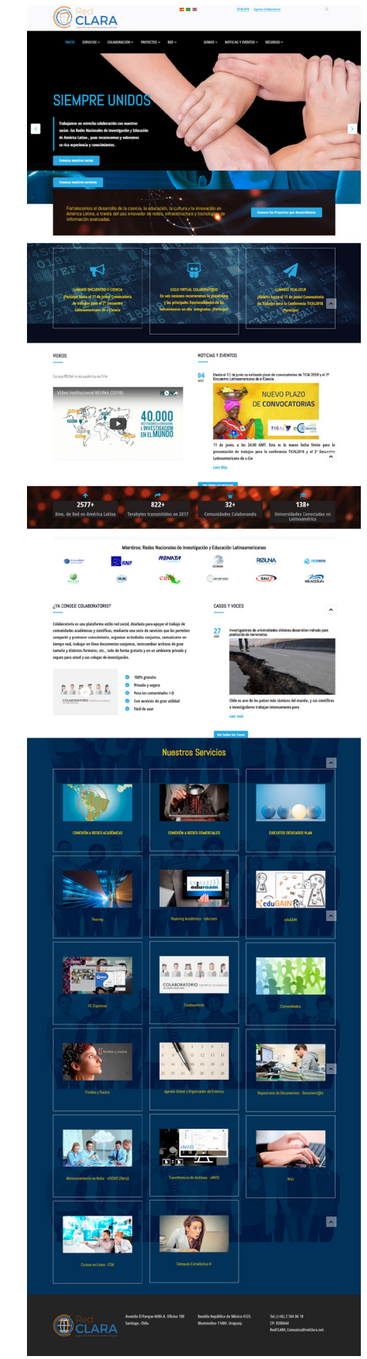
Evolution of the RedCLARA logo

www.redclara.net at 2018-03-27

The last step of this process was presented this Wednesday, March 28th, with the launch of the renewed RedCLARA logo and its new website, result of a long work held together by different areas of RedCLARA's work team and its member networks. The result can be seen at the usual web address: www.redclara.net. "This is an important moment for RedCLARA, it started with the arrival of Luis Eliécer Cadenas, our Executive Director, and continued with the new institutional focus centered on the member networks and our services. From the point of view of communications, we understand that all this must also be reflected in tour brand", says María José López, Communications and Public Relations Manager of RedCLARA.

As for the logo, the option was to modernize it, maintaining the distinctive isotype (the terrestrial globe with the Latin American profile inserted in it) and updating the colors to reflect what RedCLARA is and does. From the red and black of the old logo, the brand now features orange and blue tones, representing energy and communication, respectively.

The new website, in turn, represents an improvement to show even more clearly the services and projects developed by the regional network, such as Colaboratorio, the TICAL Conference and the BELLA project. Above all, it seeks to highlight the central relevance of the member networks. The new design offers simpler, direct and intuitive navigation, keeping features of the old site such as the English and Portuguese versions and the access to weekly news content. The mobile version follows the same parameters.



www.redclara.net at 2018-05-09

TICAL2018 and 2nd Latin American e-Science Meeting:

Back to **Cartagena**!

It was July 2013 and the third edition of TICAL was at full steam in the Colombian Caribbean. For its beauty, Cartagena de Indias already dazzled us, but what left us with remarkable memories of the event was not only the beauty and joy of living that are typical of the Caribbean, but the fact that we had managed to double the number of participants in relation to 2012, from 200 to 415 assistants. At that moment, we had a certainty: TICAL was consolidating.

But if that thing that the tango says is right, "20 years is nothing", what about five years? It's just a sigh, but a sigh full with history, change and evolution. Returning to Cartagena de Indias between the 3rd and the 5th of September, will be like returning home, to a place that, due to the shared affection, experiences, knowledge and laughter, we feel it is already ours. However, we have a few doubts: Will we be able to continue growing? Will we satisfy the expectations of those who have been with us during all these years? Can we seduce those who will be part of our Conference for the first time? And will the e-Science Meeting be able to bring together scientists and ICT leaders from regional higher education institutions around common goals? There are many questions, but we have a great desire: To meet you in Cartagena and be able to say "We have achieved our goals!".

María José López Pourailly

TICAL
Comunidad y tecnología

Open until June 11, the calls of TICAL2018 and 2nd Latin American e-Science Meeting are individual and different from each other. This is due to the different audiences to which they are driven, to the thematic lines they propose and, above all, to the approach they give to the subject of digital transformation - TICAL treats it from the view of Higher Education, and the e-Science Meeting does it from the perspective of Science and Arts. The theme 'Digital Transformation' will be the backbone that will sustain the achievement of both events.

And while the Committees await the papers, two of the international speakers expected to share their experiences with the Latin American ICT community were announced. They are the Argentine William Confalonieri, Digital Director of Deakin University, and the American Martin Hilbert, professor at the University of California, Davis. Awarded with the CIO Award 2018 by IT News, Confalonieri will bring to TICAL2018 his experience with the Deakin Genie project, chosen as the best IT project in Australia. Hilbert will share his experience of more than 10 years at the ECLAC of the United Nations Secretariat, where he created and coordinated the Information Society Programme, and his vast experience in big data. Get to know a little more about them in the interviews on the following pages.

Early registration with discounts

Those who want to know firsthand the experiences of Hilbert and Confalonieri, as well as all those who know that TICAL2018 and the 2nd e-Science Meeting are unmissable for anyone who

lead the development of ICT and Science in the Universities and Study Centers of Latin America, can now ensure their participation. The registration page for the events is already working and the registration guarantees, besides participation in the plenary and parallel sessions, a place at the Gala Dinner, the delivery of the material, lunch and coffeebreaks. Those who register until August 2 will be entitled to special discounts.

Venue

The TICAL2018 Conference and the 2nd Latin American e-Science Meeting will be held jointly between September 3 and 5, 2018 at the International Convention and Exhibition Center Las Americas, located a few minutes from the airport of the city of Cartagena de Indias.

The place counts on environments with capacities for up to 5000 people, distributed in several types of scenarios: the New Granada hall, the La Santa Maria Pavilion, the Plaza Mayor and the Plaza de la Independencia, besides the portals and gardens.

As in previous years, the event organization sought deals with hotels to get promotional prices. In 2018, we will have discounts at all Las Americas Group hotels, which can be viewed on the Conference website http://tical2018.redclara.net/.

Categories and prices for registration until August 2, 2018:

Public not belonging to RedCLARA member networks:

General public: USD$ 400
TICAL Authors: USD$ 320

Members of RedCLARA's member institutions:

Assistant: USD$ 320
TICAL Authors: USD$ 256

Categories and prices for registration after August 3, 2018:

Public not belonging to RedCLARA member networks:

General public: USD$ 500
TICAL Authors: USD$ 400

Members of RedCLARA's member institutions:

Assistant: USD$ 400
TICAL Authors: USD$ 320

Important: The authors of the e-Science Meeting do NOT pay.

TICAL
Comunidad y tecnología

William Confalonieri, Deakin University's Chief Digital Officer, Australia:

"Information technologies will cause a total disruption in the university model"

How did start the story that led an Argentine to move his family - with three very little children - to live in Australia and become a kind of rock star in the world of ICT and within it, in the complex university scene? It started with his need of offering a better quality of life to his family. That is what led William Confalonieri in a journey that, among other things, made him winner of the CIO of the Year at the Australian Executive Awards (CEO Magazine) in 2016, and two years later of the same award, granted by IT News, recognizing the Deakin Genie project as Australia's top IT project. In September he will be one of the main characters of the plenary sessions that will gather TICAL2018 and the 2nd Latin American e-Science Meeting in the Las Americas Convention Center, in Cartagena de Indias, which is the reason why we invited him to have this conversation that we know will awaken your desire to know him and to be awaiting the chance of learning from his experience.

María José López Pourailly

What would you say is the contribution of digitization to university work?

Well, if we understand digitization in its broadest sense, that is, the contribution of ICT and digital innovations, I would say that the contribution to the university and the university model is enormous, at least in the university model in which I work. Technology is basically at the heart of all operations, from managing all the processes of the professional and administrative part of the university, to providing platforms for teaching and learning, laboratories, experiments and support for students life in general. Everything has a large technology component. On the other hand, technology and digitalization are permanently affecting and changing the pedagogy, the way in which the teaching service is applied. That is an important component. Finally, we are entering an era where digital technology and innovation are generating a great impact in the organizations, not only in universities, but in all organizations. More importantly, those that are devoted to providing services, are affected by them from the root.

The level of change required to survive in the upcoming years is enormous and only those organizations that are able to see what is necessary and change in that direction, will be able to survive in the long term. Again, the "driver", the motivation of that change, is technology and digitalization.

How did you decide to build a digital transformation agenda until 2020 for Deakin University?

Well, it was not my decision to create it. At the beginning of 2012, as a result of the arrival of a new President, I was recruited by the University. The President envisioned that Deakin had to take advantage of all the digital movement that was transforming the world. As a consequence of that, I was chosen as the first CIO of the university; before there was an IT Support function for the university, but my role came with the mandate to place Deakin as one of the global leaders in terms of digital innovation.

The description of my role was not only a service provider, it was expected that IT would influence the strategy of the university in the right direction to be successful and survive the different waves of digital transformation that would affect all organizations. Thus, as of 2012, the entire executive level of the university worked to create a new strategy, and an important part of this was the "moto" we chose: "Driving the digital fronteer". It was a clear indication that we wanted to do things differently

and better than most institutions in this digital aspect. That was the 2020 agenda of the university; it was an aspiration, there was no detailed plan.

From that point, with my team we started preparing annual and three-year plans on technology and digital innovation, which were refreshed during all these years. The aspirations remain the same, but the plans are open and every three years I rewrite a digital strategy that has an annual chapter.

What was the process and which were the steps you had to follow to achieve the goal of building the digital transformation agenda?

The process was basically to understand what was the situation at that moment, and which was the final goal, and try to understand the path we should follow towards the future and the components that we had to work with. Obviously a central issue was to work with my team, to handle the cultural issues of the team I received -formed, then, by 250 people, and today, by 450-, and to understand ans solve certain problems of focus on certain things... the team members came from an administration that saw technology nothing more than as a support and not as a force for change, so we had to make many cultural changes, incorporate new disciplines, in some cases make people change and give my team the power it needed.

On the other hand I had to work with the organization and it was a very important political work, in the sense of getting a new place, one that was not the traditional one for the discipline of technology and the digital area. Even I was the only person in Australia, for many years, and I think I'm still the only one in the university sector, that being responsible for the digital area, has a seat at the executive table. In all other cases in Australia, the IT function is one level down, it does not participate in making strategic decisions. We had a lot of work to get and keep that place, and to convince the organization that a different way of working was possible.

Of course, in addition to that, it was a lot about understanding what the reality of the industry was in terms of innovation, tools, platforms, and imagining something better, imagining that it was possible to do in a certain time what would put us ahead of what the rest. It was about dreaming and inspiring and coming up with very ambitious projects that, today I can say, gave us a formidable advantage compared to other universities at national and international level, of course.

What subjects would you highlight as the most relevant of this digital transformation agenda?

I always say that technology, that the technological part, is the easy part and the complex part is when we have to incorporate the human part. What I mean is that the whole process of managing people, interacting with people or creating influence is the difficult part. As I said before, putting my team in the right place, with all the capabilities and all the necessary opportunities, was a very big work. Creating influence and putting our area at the highest level of the organization, to operate with ambitious plans, always requires a

huge political effort. Having influence across the organization, to really make the agenda a reality, is also vital; all the management of that change, of the way to behave and understand the things that the organization has, is fundamental.

I always say that the answer to digital disruption or the process of digital transformation is not technological, it is -first of all- philosophical. You have to start to understand things in a different way, and that will be one of the topics of my presentation in TICAL. Clearly, the philosophy and the way the organization understands this process is fundamental. If an organization is only concerned with improving the technology, it will not go anywhere. It is necessary to change the DNA and actually respond to the environment in a completely different way from the organizational point of view. So the change is mainly philosophical and then technological.

Is it possible to imagine a university without ICT?

Not really. It's really hard to try to imagine anything, any organization without a core of technology that makes the operation possible. I have a very specific vision about the university model, but to understand my vision it is necessary to understand that the university model in which I work is very developed; we have a lot of resources to invest in technology, and that is why we are much closer to the vision that I am going to propose. But I think that in the future, in not many years, the university experience will become completely disruptive. The game will completely change when we get maturity with respect to technologies like AI, augmented reality, contextual

technology... all these things will converge on a model that will make the college experience be much bigger in the living room of your home than in a physical place in a physical university. I believe that the days of physical campuses and physical universities are numbered. There will be exceptions, but the university model, the teaching model of the future, in my point of view, will have two characteristics: it will be totally digital and remote, and highly personalized, based on intelligent agents and augmented reality. Something no university, no entity, has been able to do so far, which is to provide highly personalized teaching on a massive level, these technologies that I have mentioned before will do so; the traditional university we know today will be a poor experience compared to what will be possible in the future. Therefore, it is inot only mpossible to imagine a university without technology today, but information technologies will cause a total disruption in the university model in the upcoming years.

What are your expectations regarding TICAL2018 and what can we expect from your presentation?

Well, from a professional point of view, I've been away from Latin America for thirteen years. Although I frequently travel for personal reasons, I am not aware of the professional reality in this region, so it will be very interesting to contact and complement my vision. I have traveled the world for different conferences and I confess that I need to complete this vision with the Latin American experience.

About my presentation, I think I can provide a very interesting perspective. Together with my organization and team we have been doing really interesting things in recent years, we have won many awards on a global level in terms of innovation and with our successes and mistakes we have learned a lot in this process. The contribution of the experience is phenomenal. I am sure that I can present a very provocative and interesting perspective.

Martin Hilbert:

"Most individuals of the human species entrust their lives to Artificial Intelligence every day"

His website has his name and there you can find all the posts and studies in which he has worked, his videos, interviews and scientific publications, besides, of course, social network content. Our interviewee is probably the strangest "fish" in the waters of TICAL and the e-Science Meeting because, unlike all those who have passed through the plenary sessions until now, he does not come from the world of ICT or of the "hard" sciences, but from the humanities; in fact he is Professor of Communications at the University of California (Davis, USA). This is one of the activities of Martin Hilbert, Big Data expert who will go to TICAL2018 to share his experience in using the big data for the development of complex models and public policies.

María José López Pourailly

Martin Hilbert

You come from the world of Humanities; journalist, sociologist, Doctor of Economics and Social Sciences. Why and at what time did you start integrating the big data into your work and life?

When I started this work at ECLAC (United Nations Regional Commission for Latin America and the Caribbean), one of the first steps was to create an Observatory for the Information Society (called OSILAC), creating indicators to measure ICT, working together with the NSOs in the region. Some of these indicators were even adopted by the United Nations Statistical Commission for global collection. I realized that when you have data from the world, it is useless to think about how exactly you want to change the world. In doing so, you remain in the world of ideas, without attaching them to reality.

More than once someone may have already said that it seems strange or curious to find a person coming from the world of the Humanities working and making such an interesting and efficient use of the big data for analyzes that are deeply associated with people's lives and the course of social policies. Do you agree that this 'interchange' is curious?

What is traditionally called "humanities" is now becoming science. We, who were an art, became science. Traditionally, when one could explain 15% of the variance in some social / economic / political study, it could be published in the most respected scientific journals in the world. 15%!? How is it possible to make public policies based on the understanding of 15%? We were not science, we were more art than science.

Now, with more than 99% of all technologically mediated information in digital format and 98% mobile penetration worldwide, the digitization of human interaction produces an impressive digital footprint of society. This has transformed the social sciences and economics, traditionally poor in data, into the most comprehensive area of empirical evidence to date. Physicists do not know how many stars there are in the Universe, and biologists do not know where the fish are in the ocean. Our 7.5 billion study subjects all carry a location sensor in their pockets, and we know every second of the day where they are. They record most business transactions with a financial footprint and tell us who their friends are and what they communicate with them. With this we can predict their future actions with an accuracy of 85-90%. For example, knowing to which radio bases your cell phone was connected, I can predict with 90% accuracy where you will be tomorrow afternoon and next year. This begins to be science.

What seduces you most in data analysis work?

Understand society and how it works, to see how we can improve it.

In terms of public policy development and advice to governments in this line, you have been through a long way. From this, how would you explain to the world in which you work the importance of the big data for the generation of policies that affect the lives of all human beings and the ways in which governments can improve the living conditions of its citizens?

Most important when it comes to working with massive data, it's not the data itself, but the algorithms, which summarize the patterns in the data. In other words, it is the knowledge that you can extract from the data. Discover the patterns behind it, see the shadow of the mechanism that created the data, a mechanism that shapes the reality we see. The data is the shadow in Plato's cave. We are interested in what generated the data, the mechanism behind that generation; is the knowledge of how the world works and that is what this current paradigm leads to: knowledge.

We are in transition from the information society to the knowledge society. An algorithm is knowledge. The digital era had three phases, the first was communication (phones and the Internet in the 1990s and 2000), the second,

information (social networks and big data), we are now entering the era of knowledge, algorithms (machine learning and artificial intelligence). Development is a process of knowledge. How can you want to improve the living conditions of citizens without knowledge? Today, the five most valuable companies in the world work with this issue. A couple of years ago, these were still oil or industrial giants. Today, however, they are data and machine learning companies. So for me, this question is at the heart of the development of a society.

What is or should be strategic in the management of social networks for university institutions, governments and community organizations?

I think the whole society should reflect a little more on the effective use of social networks. Those more dominant nowadays are not so social; are primarily commercial. Originally, it was a quasi-socialist ambition that led Silicon Valley to create free services for all. And it's true, today you can use Facebook for free, like YouTube. But in the end, to make it viable, they sold themselves out to the commercials and created the most controlling capitalist machine we've ever seen in history. The result has been that all communication between you and me is mediated by ferocious commercial interests.

This is very different from a traditional media model, where you pay a monthly fee to talk on the phone and where there is no distortion, or in the case of public television, which is not the subject of commercial interests, or at

least did not depend on that. Facebook and Google are completely dependent on commercials and this does not leave them much flexibility. We have to rethink if it was not better when we paid for the landline, but with the guarantee that no one would distort our communication for commercial purposes.

From a sociological point of view, is it possible to understand the current world without ICT? Why?

At this time, most individuals of the human species entrust their lives to artificial intelligence, every day. For example, relying on the anti-lock braking system in cars (ABS) or on authomatic aircraft pilots. The main source of energy of mankind (the electric grid) is completely in the hands of artificial intelligence; three of every four transactions in the largest homo sapiens stock market (the US market) are executed by automated trading algorithms; and with one in three marriages in the United States starting online, digital algorithms have also begun to play an undeniable role in sexual mating and in the genetic inheritance of mankind.

If you told me, "Martin, we found an alien species, and they delegated to the machines almost all their power distribution decisions, 3/4 of their resource allocation decisions, and an average of 1/3 of their procreation decision, it would be difficult to deny how indispensable these machines are to this species. We are this species. There is no need for a chip in the brain (although it is on the way). On a sociological level, we have merged with artificial intelligence.

What are your expectations regarding the participation in TICAL? What can we expect from your presentation?

I want to learn from your challenges! I just got back from the 6th Ministerial Conference on the Information Society of Latin America and the Caribbean (eLAC2020), which also took place at the Hotel Las Americas in Cartagena. 26 governments, 23 of the region with almost 1,000 delegates, discussed the themes of the sixth version of the eLAC Regional Action Plan. The discussion included topics such as blockchain, Internet of Things and Artificial Intelligence. When I wrote the first version of eLAC on a Sunday afternoon in 2003, I would never have imagined that 15 years later that plan would still exist and that I would worry about issues like that! But the issue is stronger and more important than ever, and there are always new issues on the agenda. So, I'm already looking forward to seeing what I can learn at TICAL2018!

Get to know Martin Hilbert better:

http://www.martinhilbert.net/category/in-the-news/

http://www.theclinic.cl/2017/01/19/martin-hilbert-experto-redes-digitales-obama-trump-usaron-big-data-lavar-cerebros/

http://www.theclinic.cl/2018/04/18/martin-hilbert-escandalo-facebook-estamos-atacando-los-sintomas-no-la-enfermedad/

Collaborative work

RedCLARA and RICAP sign agreement to create cooperation mechanisms

Aiming to establish a regulatory framework with respect to cooperation mechanisms between the Latin American Cooperation of Advanced Networks (RedCLARA) and the Ibero-American Network of High Performance Computing (RICAP), both institutions signed, on December 11, 2017, a Memorandum of Understanding (MoU) in which commit, among other actions, to exchange and promote its experiences and best practices, provide and carry out joint training and teaching activities, and integrate its cloud computing platforms into a single infrastructure.

Luiz Alberto Rasseli

Luis Eliécer Cadenas, Executive Director of RedCLARA, and Rafael Mayo, Coordinator of RICAP, are the signatories of the agreement, valid until the end of the year 2020.

Based in Madrid, Spain, RICAP is a thematic network that provides to the region a strategic infrastructure in the field of high performance computing from an advanced architecture that includes High Performance Computing (HPC) and High Productivity (HTC). For this, it brings together several organizations and develops different software tools designed to facilitate the access and the computational efficiency of this hardware infrastructure, encouraging free use through various dissemination actions.

The agreement with RedCLARA is another step in that direction, given that it also seeks to increase awareness and information on the activities of each network by its members, as well as by potential users and those responsible for making decisions within the respective beneficiary communities. "The importance of the MoU is really vital given that, without RedCLARA, the scope and impact that RICAP could have would be much more limited. Thanks to all the activities that RedCLARA regularly carries out, RICAP will be promoted and will be able to fulfill its commitments more effectively. Likewise, RedCLARA will benefit from the fact that it will provide its associates with a much greater computing capacity", celebrates Rafael Mayo.

For Luis Eliécer Cadenas, the MoU between RedCLARA and RICAP is promoting a way of acting that is key for the academic community in the region. "Sharing the invested resources, generally scarce, promoting local or regional initiatives so that the entire community has access to it, gives a value to the cooperative effort that goes beyond pure connectivity," he analyzes. The Director also explains what the next steps of the initiative will be: "We will define, together, a work plan that includes online training and the structure of the technical methods required for members of any academic network in Latin America, in order to allow them to use these resources with security guarantee".

The MoU does not imply any type of binding legal obligation and may be renewed automatically for 39 months at the end. To obtain more information about the Memorandum of Understanding and its resolutions visit RedCLARA's website.

The agreement with RICAP is the third of the type signed by RedCLARA in the last months. In September 2017, the regional network signed a MoU with the Bolivian chapter of Internet Society for the development of Bolivia's advanced national network and its subsequent integration into the regional network, and in December the agreement with SOS Telemedicina, of Venezuela, was announced, to extend and develop initiatives in the area.

Between Santiago and La Serena

Chile inaugurates the first stretch of its high speed optical network

In a milestone of collaborative work between scientists, professionals from the world of technologies and academics from La Serena and Santiago (northern and central Chile), and with direct connection by videoconference between both cities, was held on April 19, the inauguration ceremony of the first stretch of the High Speed Optic Fiber Network of REUNA, the Chilean National Research and Education Network.

Luiz Alberto Rasseli / Comunicações REUNA

This new network is the first result of a project that, framed in the Strategic Development Plan of the Chilean advanced network, is led by REUNA with the participation of the AURA Observatory, as responsible for the Great LSST Telescope project, and Telefónica, as a technological partner. The digital route was designed as an infrastructure for the enormous amount of data that LSST will generate as of 2021, and will be available for the open access of astronomers, scientists, academics and students between Santiago and La Serena.

The stretch will be illuminated with multiple channels of 100 Gigabits per second and in the rest of the year, another stretch will be inaugurated with the same technology, connecting the cities of the Santiago, Concepción and Temuco. Subsequently, between 2019 and 2020, REUNA will launch stretches between La Serena-Arica and then Temuco-Puerto Montt, to finish between 2020 and 2021, with the potential integration of REUNA Networks to the Southern Optical Fiber of the Government of Chile, to unite the scientific and teaching community in the extreme south of the country.

The inauguration brought together public, academic and scientific authorities and experts from the world of astronomy and the industrial area, located in Santiago and La Serena, who analyzed the impact of having enabling infrastructures such as high-speed networks and access to huge repository of freely available astronomical data, laying the foundations for the various industries that increasingly produce and analyze more and more data. The event included a telepanel between both locations, with the participation of: Christian Nicolai, Executive Director of Conicyt; Dr. Nibaldo Avilés, Rector of the University of La Serena; Dr. Chris Smith, Director of the AURA Observatory in Chile; Roberto Muñoz, General Manager of Telefónica in Chile; Dr. José Palacios, Chairman of the Board of Directors of REUNA, and Dr. Fernando Liello, Director for Europe of the BELLA project - Building the Europe Link to Latin America, an initiative that is working on the connection of Latin America and Europe through a submarine cable that will unite both regions, and on the improvement of the capabilities of RedCLARA (and its step towards the constitution of an optical backbone in South America), which will be directly benefited by the REUNA effort.

"This first milestone is the materialization of a dream we coined in the 90s, working on the construction of networks to interconnect research centers and universities. This time we take a leap in speed and technology, deploying an avant-garde network with world-class standards that has been catalyzed by Astronomy projects, but that in its anteroom is extended and shared with research centers and universities in the network", commented Paola Arellano, Executive Director of REUNA.

The mega digital infrastructure, which extends over 800 kilometers of optic fiber, becomes a large digital highway, with transversal access and capable of moving huge volumes of data at high speed. Chile thus ranks as the vanguard in Latin America in digital development and high quality connectivity for research and education. According to Arellano, there are few regional networks with these purposes that have long-distance infrastructure like this: "Today, thanks to this step, we share the leadership with Ecuador and Colombia that inaugurated their networks last year", concluded.

For more information about the inauguration and to read this information from its source, visit http://www.reuna.cl

Authorities in La Serena; from left to right: Dr. Nibaldo Avilés, Rector of the Universidad de La Serena; Lucía Pinto, mayor of the Coquimbo region; Dr. R. Chris Smith, ,director and head of the AURA Observatory Mission in Chile; Paola Arellano, executive director of REUNA.

Photo authorities in Santiago; from left to right: Fernando Liello, Bella project director; Roberto Muñoz, general manager of Telefónica Chile; José Palacios, president of the REUNA Board; Christian Nicolai, executive director of CONICYT. Credits: Communications CONICYT.

Researchers from Chilean universities developed a method **for predicting earthquakes**

Chile is one of the most seismic countries in the world, which is why its scientists and researchers work hard to understand and deal with these natural phenomena that have caused so much damage to the country throughout its history and, more profoundly, in the last decade. And in 2018, after three years of data collection and analysis, a team of researchers from the University of Chile (linked to the Chilean advanced network, REUNA) and Tarapacá, made a breakthrough that could result in this direction: a mechanism of prediction of earthquakes.

Luiz Alberto Rasseli

In analyzing the behavior of the magnetic field in the Earth's southern hemisphere, the team led by Enrique Cordaro, a researcher at the Faculty of Physical and Mathematical Sciences of the University of Chile and the Faculty of Engineering of the Autonomous University of Chile, found an anomaly that, after approximately 30 days of its occurrence, is followed by a major earthquake in some sector of the planet.

"From our three observatories of cosmic radiation and geomagnetism in Putre, Santiago, and Antarctica, we measured the incoming radiation particles and the magnetic field with magnetometers installed on the ground. We observed abrupt changes in the near magnetic field before the movements which generated oscillations that ended only 2 to 6 hours before the event [earthquake] occurred", explains Cordaro. Similar behavior was found in the earthquakes of Maule (Chile) in 2010, Sumatra (Indonesia) in 2004 and Tohoku (Japan) in 2011. In all three cases, every time an earthquake could occur, the magnetic field fell. After a while, the earthquake actually occurred.

According to the evidence, terrestrial magnetism and the occurrence of earthquakes are strongly linked.

Enrique Cordaro, photograph published by Qué Pasa magazine in http://www.quepasa.cl/articulo/ciencia/2018/04/terremoto-en-el-cielo.shtml/

According to the researcher, this discovery is a first step that opens the possibility of predicting earthquakes. "Now, together with our co-investigator, Dr. David Laroze, and our thesis researcher, Patricio Venega, from the Department of Geophysics of the University of Chile, we want to deepen this relationship between geomagnetism and earthquakes, and so we are analyzing the last three major earthquakes in Chile, Maule in 2010 (8.8 degrees on the Richter scale), Iquique 2014 (8.2) and Illapel 2015 (8.3). The idea now is to seek the necessary funding to keep the observatory operation operating continuously", explains the researcher.

The complete study, which drew the attention of the Chilean and international media, is entitled "Latitudinal variation rate of geomagnetic cutoff rigidity in the active Chilean convergent margin" and was published in the prestigious German magazine Annales Geophysicae, being available for consultation at https://www.ann-geophys.net/36/275/2018/

In the framework of BELLA

First 100 Gb/s link of the IPê network starts operating

The first 100Gb/s link of Ipê network, that connects the Points of Presence of Paraíba and Pernambuco, in Brazil, came into operation on March 16. The delivery of this first circuit is part of the agreement signed between RNP and the Companhia Hidroelétrica do São Francisco (Chesf) for the technological evolution of the national academic network, supported by the company's transmission lines. The infrastructure sharing agreement with Chesf will last 20 years and receive investments from the Northeast Connected Program (Programa Nordeste Conectado) of the Ministry of Education to take broadband access for education and research.

RNP

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The announcement was made on Monday (19th), on the agenda of the Minister of Education, Mendonça Filho, in the city of Gravatá (PE). On the occasion, Chesf's Chief Operating Officer, João Henrique Franklin, highlighted the benefits of the cooperation for the academic community. "More than transmitting electricity through our transmission lines and substations, this partnership represents a technological leap for the Northeast and Brazil, and shows Chesf's commitment to socioeconomic development and quality of life of all", said Franklin.

The first phase of the project, scheduled to be completed in the first semester, includes deliveries of five other backbone links at 100G in the Northeast, on the routes between Fortaleza, Natal, Campina Grande, Recife, Maceió, Aracaju and Salvador. In all, 28 campuses of federal institutions from 19 cities in the rural area of the Northeast will benefit directly from this first phase, with

RNP Photo: The Director of Engineering and Operations of RNP, Eduardo Grizendi, and the Minister of Education of Brazil, Mendonça Filho, in Gravatá (PE).

speeds starting at 1 Gbps. By the end of 2019, in the second phase of the project, another 77 cities in the Northeast will be contemplated.

The increase in capacity of the Ipê network in the Northeast also indirectly benefits all the institutions connected to the RNP's Presence Points in those states with 100 Gbps technology. This very high performance capability can be taken to other locations in the countryside by the optical network projects undertaken by the state governments, with its own resources and in partnership with RNP, with investments from the Veredas Novas Estaduais Program of the Ministry of Science, Technology, Innovation and Communications (MCTIC). The state network of Pernambuco (RePEPE) is already under construction, and the delivery of the first phase is scheduled for June.

Also in 2018, the backbone project at 100 Gbps will be extended to other regions of the country, due to the agreements signed with Furnas and Eletrosul. First, it will reach São Paulo and Rio de Janeiro, and then it will reach other routes served by the Southeast ring, which includes nine states (Minas Gerais, Rio de Janeiro, Espírito Santo, São Paulo, Mato Grosso, Federal District, Goiás, Paraná and Tocantins). By the end of 2019, other 100G links will be operational in the south of the country and in Mato Grosso do Sul, with international connections on the borders with Argentina, Paraguay and Uruguay.

In the North region, the expectation is to meet the RNP's Points of Presence at 100 Gbps through the deliveries of the Amazonian Connected Program, led by the Brazilian Army, which implants fibre optic cables in the Amazon River basin.

System collects data to minimize climate change impact on the Amazon

The Amazon region is one of the ecosystems on the planet most affected by global climate change. The reason is variations in the Ecuador line cause events like floods, droughts and storms that directly affect the environment and the local population.

RNP / In the Field

n seasonal periods of low rainfall and high air temperatures, river water levels in the Amazon basin get too low for navigation, leaving communities isolated. The droughts also cause fires that alter the ecological balance in the Amazon Forest, which holds 12% of the world's biodiversity. Deforestation by human action aggravates this scenario even more.

Given the effects of these climate phenomena, a monitoring system was launched in Brazil, integrating hydro-meteorological data from the Amazon, such as rainfall and river conditions. The system, called SIPAMHidro, generates information to be used by the scientific community, public agencies, and by the general population. SIPAMHidro is operated by the Operational and Management Centre of the Amazon Protection System (Censipam), linked to the Ministry of Defence.

One of SIPAMHidros tasks is the monitoring of atmospheric electrical discharges in the Amazon measured by radio frequency receiving antennas, which can locate lightning up to 7,000 km away. The data is sent from the city of Belém, in the North region, to the Institute of Astronomy, Geophysics and Atmospheric Sciences of the University of São Paulo (IAG/USP). This academic unit coordinates an international cooperation network, STARNET, for detection of atmospheric discharges.

Monitoring can be followed on the Raios Online portal, which shows the geo-referenced information of two sensors in the Amazon region, in Belém and Manaus, and ten other sensors – nine in Latin America and one in Cape Verde, Africa. Sensor data are collected and processed in São Paulo and made accessible to researchers in the country and abroad.

Due to connectivity difficulties in the Amazon, the responsible agency uses the Brazilian National Research and Educational Network RNPs e-Science service, Cipó, which creates end-to-end circuits to use a direct data communications channel with the University of São Paulo. The service facilitates the daily work of researchers who require guaranteed bandwidth and better performance in data transfers where the time factor is critical. This is the case of the STARNET network, which carries out updates every five minutes.

According to Censipam, data from the SIPAMHidro system contributes to advances in research on the Earth's hydrological cycle, where the Amazon is one of the most active regions. Also the data serves as basis for real-time applications in the areas of water resources, meteorology, aviation security and in the energy sector. Also, river navigation benefits from the SIPAMHidro system, a valuable help in this region, where rivers are the most important transport routes.

For Censipam's Science and Technology analyst Márcio Lopes, this information makes it possible to forecast severe weather and issue alerts that can save lives:"In the Amazon, public agencies such as state and city Civil Defence can access real-time information on floods, droughts and severe storms, followed by flooding and inundation, to minimize the impacts of natural disasters on inhabited areas".

New international 100 Gb/s connections are activated in Fortaleza and Chile

The Amlight consortium, which manages international connections between the United States and Latin America for teaching and research purposes, has announced the activation of new 100 Gb/s international connections in Fortaleza, Brazil, and Santiago, Chile. With these new links, researchers and students in both countries will have access to a new network infrastructure with ten times the bandwidth, to the benefit of international academic collaboration.

RNP, with information of Amlight

The new links are part of the AmLight Express and Protect (AmLight Exp) project, which receives resources from the National Science Foundation (NSF) and lasts for five years. The connections form a ring between Miami, Fortaleza, Sao Paulo, Santiago and again Miami, which makes the 100 Gb/ capacity also available in Santiago and Fortaleza. "This ring will soon be connected to future Ellalink (from Portugal) and SACS (from Angola) submarine cables, forming what should be called the South Atlantic Crossroads-SAX," said the RNP R&D director, Michael Stanton.

The high-performance connections will also serve the LSST (Large Synoptic Survey Telescope) project, a telescope that is under construction in Cerro Pachón, Chile. "The network will allow LSST data to travel to our data unit at the University of Illinois National Center for Supercomputing Applications (NCSA) in a matter of seconds. There, it will be processed in real-time for transient event alerts and annual releases of data containing billions of galaxies and stars", said the LSST project manager Jeffrey Kantor.

Researcher at the Florida International University (FIU), Julio Ibarra highlighted the geographically strategic positions of the two cities. "By adding Santiago and Fortaleza to the AmLight-ExP 100G ring, educational and research activities between the United States and South American countries will be able to rely on a more resilient and high-capacity network infrastructure", celebrated the researcher.

According to the project coordinator of the São Paulo academic network (ANSP), Luis Lopez, the reliability of high bandwidth is a challenge in a continental country like Brazil. "This great work of RNP with Brazil's electricity companies will allow us to extend a 100G backbone from the rainforest of the far north to the plains of the south. We need not to say how important this is for national and international scientific collaboration in the American continent", commented.

The AmLight consortium is a group of local, regional, and national academic and university networks: the Florida International University, RNP, ANSP, the academic networks of Chile (Reuna), Florida (FLR), the United States (Internet2), RedCLARA, which connects academic networks in Latin America, the Association of Universities for Research in Astronomy (AURA) and the telecom operator Telecom Italia Sparkle.

Training

BELLA Project offers free courses on optical networks and networks defined by software

Both courses are part of the training activities developed by the BELLA project (Building the Europe Link to Latin America) and are now available free of charge to all those interested at CLARA's EDX platform.

Luiz Alberto Rasseli

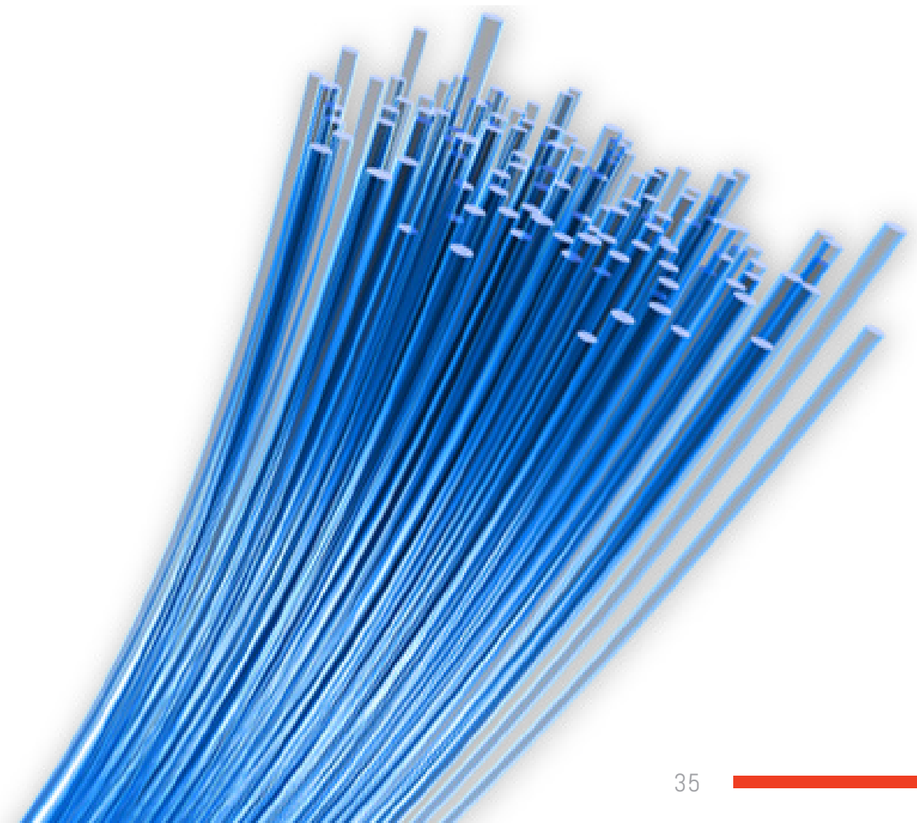
Through both courses, BELLA aims to prepare the National Research and Education Networks of Latin America, and the network engineers of its affiliated institutions, for the substantial change that RedCLARA's new optical backbone, which is being developed through BELLA, will impose.

In the course "Optical Network Systems" the students will have the get access to the concepts and foundations of Dense Wave Division Multiplexing (DWDM) and Coarse Wave Division Multiplexing (CWDM) optical network systems. The content includes the theoretical description of the types of modulation used for the transmission of multiple optical channels on an optical fiber wire, and describes the elements that affect the transmission, as attenuation, dispersion and non-linear effects that must be taken into account when designing or operating optical networks.

The networks defined by software, in turn, constitute the new paradigm in network architecture, which seeks to improve flexibility, programmability, cost and security in data networks. Move from an intelligence model distributed in the network elements to a centralized control model, with switches based on the Openflow protocol. In this course, students will understand how this protocol works, its characteristics and the network elements involved in a software defined network architecture (SDN). The students will also have the opportunity to perform practical exercises, using the Mininet simulator, Open vSwitch and the Opendaylight driver.

The courses are taught by experts in the respective areas, namely Dr. Ricardo Alberto Olivares Veliz, Head of the Department of Electronic Engineering at UTFSM, Valparaíso, Chile (Optical Network Systems), and Javier Richard Quinto, Master of Electrical Engineering in the Area of Computer Engineering by the State University of Campinas (UNICAMP) and student of Doctorate in Electrical Engineering in the Area of Computer Engineering, also by the UNICAMP (Networks defined by software).

The CLARA EDX platform works better with current versions of Chrome, Firefox or Safari, or with Internet Explorer version 9 and higher. To register, simply access the EDX module through Colaboratorio https://colaboratorio.redclara.net), click on the desired course and fill out the registration form. After registration, more information will be sent to your email.



Towards Open Science

LA Referencia presented its new policies of scientific data at international event in Rio

LA Referencia – a Latin American initiative for Open Access and Science generated by RedCLARA - participated on April 17, at the Latin American and Caribbean Scientific Data Management Workshop of World Data System (WDS) in Rio de Janeiro, which aimed to discuss the best practices of scientific data management developed by research institutions in Latin America and the Caribbean and identify ongoing initiatives, among other aspects.

Luiz Alberto Rasseli

On the occasion, Alberto Cabezas, Executive Secretary, participated in Panel 2 of the first day of discussion, called "Challenges for data management projects in Latin America & the Caribbean". The Secretary presented the article "Public goods for scientific data policies in Latin America", developed jointly with Bianca Amaro (IBICT), Paola Azrilevich (SNRD Argentina), Patricia Muñoz Palma (Conicyt Chile) and Silvia Nakano (Mincyt Argentina). The links of the documents and the presentation in PPT are available at the end of this page.

The presentation is a synthesis of the vision generated by LA Referencia's Council at the beginning of the year. It addresses open science in general and the open scientific data for Latin America, describing the regional context, the priorities and the public policies that should guide the action. In addition, the document presents the internationalization progress in the context of Coar (Confederation of Open Access Repositories) and OpenAIRE, the Horizon2020 program platform for Open Science, concluding with a reflection on the alignment with the F.A.I.R. Principles. "The above represents an effort to set the priorities of public goods in the medium term and an approach to the challenge of scientific data, coherent to the trajectory of Open Access in the region, in areas such as technology, licenses, guidelines, among others. It is a common vision that aims to avoid the duplication of efforts and deepen a model of regional collaboration in this area", explains Cabezas.

The Latin American and Caribbean Scientific Data Management Workshop was convened by the World Data System (WDS), an interdisciplinary body of the International Council for Science (ICSU), responsible for creating an international network of data services to support international science, and by the Brazilian Academy of Sciences. The workshop offered the opportunity to explore the data landscape in Latin America and the Caribbean, identifying initiatives in the area, its strengths and limitations, and new opportunities for collaboration. In addition, trends and future perspectives for the scientific data systems were analyzed, as well as the criteria and standards for the certification of data repositories. The Latin American and Caribbean Scientific Data Management Workshop had the support of ICSU-Rolac, of the Brazilian advanced network, RNP, and of the Brazilian Institute of Information on Science and Technology (Ibict), among others.

AGENDA 2018

June

6 - 8 | EUNIS 2018 Annual Congress
Paris, France
http://www.eunis.org/calendar/eunis-2018-congress/

10 -14 | TNC18 - Networking Conference
Trondheim, Norway
https://tnc18.geant.org

18 - 21 | CANHEIT
Burnaby, Canada
https://canheit-tecc.sfu.ca

24 - 29| FIRST Annual Conference
Kuala Lumpur, Malaysia
https://www.first.org/conference/2018/hotel

25 - 26| The Digital Assembly 2018
Sofia, Bulgaria
https://eu2018bg.bg

July

4 - 5 | 14th Service and Technology Forum
Poznan, Poland
https://eventr.geant.org/events/2911

9 - 13 | CHEP2018
Sofia, Bulgaria
http://chep2018.org

14 - 20 | IETF 102
Montreal, Canada
https://ietf.org/how/meetings/102/

August

5 - 9 | 46th APAN Meeting
Auckland, New Zealand
http://apan46.nz/apan46

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