

# De **CLARA**

Cooperación Latino Americana de Redes Avanzadas

BULLETIN

# 55

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**RedCLARA  
launches a new  
version of its web  
portal**

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**The Copernicus  
Academy is  
making steady  
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Central America**

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**Training to boost  
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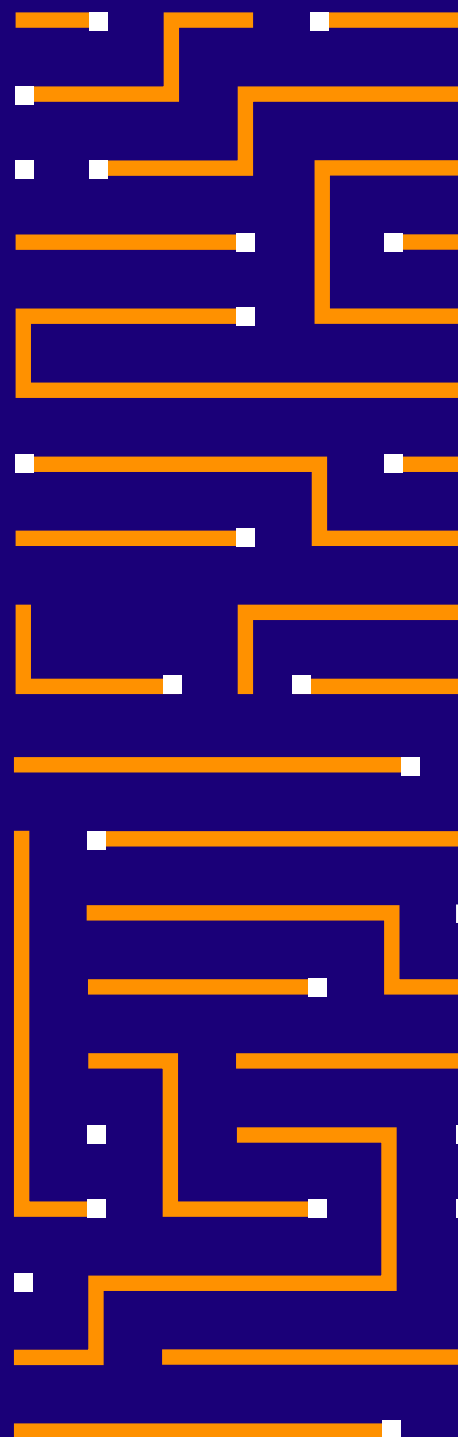
**RedCLARA**

Cooperación Latino Americana  
de Redes Avanzadas



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**Luis Eliécer Cadenas**

Executive Director  
RedCLARA

**RedCLARA is an extraordinary organization that has given great steps in a transformation process that strengthens its capacity to articulate multiple Latin American and Caribbean digital ecosystem actors supporting research, education, and innovation.**

The digital ecosystem of RedCLARA and of the national research and education networks that are part of it, is undoubtedly unique in Latin America and the Caribbean. This ecosystem promotes and supports more than two thousand universities, higher education institutions, and regional research centres through digital technologies, incorporating them into the broader ecosystem that integrates the tens of thousands of peer institutions worldwide.

Throughout its history, this cooperation, embodied in RedCLARA, has given birth to many other organizations that are key for the regional strengthening and development that we promote. SCALAC, our sister organization, initially emerged from a project funded by the European Commission. Today, it brings together major high-performance computing centres from Mexico to Patagonia, and it is the basis for developing education and research initiatives in such relevant topics as artificial intelligence, climate change, and many other areas of knowledge that base their progress on processing large volumes of data. LA Referencia, the open access repositories network that gives visibility to the scientific production of higher education and research institutions in Latin America, promoting open and free access to the full text of nearly five million publications, or LACNET, the blockchain infrastructure designed to enable inclusive and scalable projects and solutions on the web 3.0 that was founded by IDB-LAB, LACNIC, and RedCLARA, are testimony to the fruitful work of our organization.

These achievements are the direct result of the collaborative efforts of our networks and numerous other organizations, both on our continent and globally. Thanks to this sustained work, we have built unique capabilities that, guided by the

sense and purpose of our community, are dedicated to serving our countries and societies in an open, neutral, and supportive manner.

Our capabilities are rapidly expanding, through projects like BELLA II, which we are implementing with the support and co-funding of the European Commission's International Partnerships Directorate. This project aims to integrate more countries, amplifying our digital ecosystem's impact and influence. In the context of this initiative and of the Digital Alliance between Europe, Latin America, and the Caribbean, we recently presented BELLA II at the Europe Day celebration in Guatemala. This event brought together key actors from government, private enterprise, diplomatic bodies, civil society organizations, and international cooperation, all playing a crucial role in promoting meaningful connectivity and human-centred digital transformation.

In coordination with the EU Delegation in Guatemala and with more than 30 participants from academia, government, and the private sector, we held an essential face-to-face meeting to introduce the deployment strategy of the Copernicus Academy in Guatemala. This strategy is advancing rapidly; we already had the kick-off webinar, and we are planning the next steps with the commitment and enthusiasm of all sectors. The Copernicus Academy seeks to enhance access and capacities for using Earth observation data in valuable projects that tackle the main challenges of the countries and the region and is promoted by RedCLARA in the framework of BELLA II.

In Costa Rica, in addition to the Copernicus Academy implementation process, very good news are projected for the second half of 2024. We

are working with key sectors and the national advanced network, RedCONARE, to consolidate the first investment and innovation consortium model of the BELLA II project, which will bring enormous benefits to the country's connectivity and development.

We also participated in the "Policy Dialogue on Digital Governance," organized in the framework of the EU-LAC Digital Alliance in the Costa Rican capital, San José; the activity was attended by more than 100 representatives from 37 countries, including senior government officials and multiple stakeholders. Cross-border interoperability, cross-border electronic identity and signature, and modern digital public services are essential areas of collaboration explored in depth at the event. RedCLARA has a lot to contribute in supporting the countries to make them all a reality.

As an organization, we are at the service of the national networks and societies we seek to impact. Therefore, in this edition, we also share with you that we have completely redesigned the interface of our website to make it more accessible, attractive, and valuable for the regional community and to help to foster collaboration in education, science, and technology. This new portal embodies our commitment to a diverse region, cooperating to make technology a way to drive development.

All that we have achieved in the first half of the year gives us great satisfaction. But we are even more excited about what is to come and, of course, about continuing to work together with you, our allies, in this journey in which we tirelessly seek to enhance the development of our region for the benefit of all people.

# To enhance collaboration, RedCLARA launches a new version of its web portal

Luiz Rasseli

The Latin American Cooperation of Advanced Networks (RedCLARA) presented its renewed web portal last May: Its completely redesigned interface provides the quality information required by the National Research and Education Networks (RNIE), the regional community, and the regional ecosystem of science, technology, and innovation, giving a new impetus to collaboration.

The launching of the new website is part of the organization's positioning and visibility strategy and reflects its commitment to inclusion, connectivity, innovation, and digital transformation in Latin America and the Caribbean. RedCLARA launched its visual identity in June 2023 to celebrate its 20th anniversary, and the new colours, typography, and image align with this.

"The launch of the new website is another step towards what we want as an organization: modernity and innovation, without losing sight of our commitment to collaboration. Luis Eliécer Cadenas, Executive Director of RedCLARA, highlights these values in the design and our efforts to make our website more accessible, attractive, and valuable to the user community.

In addition to the visual characteristics and brand attributes, the improvement of the functionality of the website stands out, as does the improvement of the user experience on different electronic devices (mobile phones, computers and tablets). The site is easier to navigate, with optimal speed and high security standards.

One of the notable changes is the redistribution of content in the initial menu, organized around the three



axes of RedCLARA's work: infrastructure, articulation, and services. This structure not only seeks to define the organization's scope of action clearly but also to facilitate identification and quick access to the desired content.

The new navigation structure prominently places the News, Use Cases, and Events sections, allowing users to access information on the most relevant events and advances in the universe of advanced networks in Latin America and the Caribbean and their cooperation with Europe.

In addition, the new portal maintains its function as a broad repository of historical documentation reflecting the evolution of NRENs in the region. The compendia, bulletins, reports, and books produced by RedCLARA and its member networks over the past 20 years are still available to the public. Networks and users will also be able to quickly find the services offered by RedCLARA to promote and contribute to science, education, and innovation in the region.

The website address remains the same so that you can explore the new design at [www.redclara.net](http://www.redclara.net).



## The Copernicus Academy is making steady progress in Central America

Jenny Flores

RedCLARA leads the Copernicus Academy deployment in Latin America and the Caribbean within the BELLA II project. This strategic initiative aims to enhance capacity development and knowledge management to fully leverage data and information services from the European Union's Earth observation program, Copernicus. The implementation of the Copernicus Academy in the region follows four phases: the first involves conducting a webinar for introduction and the subsequent distribution of a survey to identify the country's main challenges and areas of interest. The second phase

entails the creation of a workshop aimed at technically demonstrating the use and scope of the Copernicus Program. The third phase entails the establishment of a national committee, and the fourth phase involves the development of a pilot project to execute specific initiatives in the country.

Countries such as Uruguay, Costa Rica, Mexico, Guatemala, and Ecuador are progressing through these stages in Latin America, while Chile and Panama play crucial roles as regional offices for the Copernicus program, providing technical support

and facilitating direct interaction with data and knowledge.

In Central America, Costa Rica and Guatemala have pioneered implementing the Copernicus Academy. After over 40 representatives from government entities, academia, and the private sector attended a workshop in April, Costa Rica established a National Committee, initiating the third implementation phase. Costa Rica's National Research and Education Network (RNIE), RedCONARE, the University of Costa Rica (UCR), and the Inter-American Institute for Cooperation on Agriculture (IICA) supported this event.

"Copernicus is a central element in BELLA II's strategy to develop a digital ecosystem in the region, and Costa Rica is progressing towards becoming a major success story, using this tool," said Laura Castellana, Coordinator of Academic Projects at RedCLARA.

The introductory webinar took place in Guatemala in June, and preparations are underway for an in-person workshop in July that will coincide with a presentation at the Book Fair.

Laura Castellana, Coordinator of Academic Projects at RedCLARA, added that deploying the Copernicus Academy in Central America represents a unique opportunity to

train current and future generations in the effective use and processing of satellite data and images, thereby contributing to improving the planet and the quality of life of its inhabitants.

In 2022, RedCLARA, along with organizations and programs such as Copernicus, GEO, and AmeriGEO, launched the Earth Observation Strategy, which includes the deployment of the Copernicus Academy. Since then, RedCLARA has implemented various initiatives, such as the "Copernicus Innovation Challenge Ideathon" and the "Copernicus Innovation Development Hackathon" in 2023, enhancing cooperation and utilizing satellite data to tackle regional issues like climate change, natural disasters, and water management.



# Training to boost the response to cyberattacks in Latin America and the Caribbean



Statistics don't lie: in recent years, there has been a significant increase in cyberattacks worldwide. Companies of all sizes and sectors have suffered increasingly sophisticated attacks, resulting in substantial financial and operational losses. The story has been similar in the higher education sector, where some universities have experienced disruptions in their activities, lost sensitive data, and interrupted teaching and learning processes, among other consequences.

Luiz Rasseli

To find out how higher education institutions in Latin America and the Caribbean can address these challenges and the role of the Cybersecurity Incident Response Teams (CSIRTs), RedCLARA, and the Latin America and the Caribbean Cyber Capacity Building Center (LAC4) implemented by EU CyberNet and funded by the European Union (EU), with the support of the Cybersecurity Group of the National Research and Education Networks (NRENs) of the region, EduLACSeg, conducted the virtual course "Training for the Creation and Operation of CSIRTs in the Academic Sector" in March, which benefitted almost 60 organizations, represented by 85 registered individuals from 18 countries.

Within a specific organization or community, CSIRTs are teams dedicated to providing prevention, management, handling, and response services to information security incidents, and promoting a security culture among users. In this sense, the training provided knowledge and skills to understand these centers, their organization, operation, and

the steps to be followed for their establishment, with a focus on the academic sector.

Security Governance expert Jurica Čular led the course and included keynotes with experts such as the Cybersecurity Analyst from TalTech, Estonia, Toomas Lepik, and presentations of case studies by cybersecurity officials from Latin American NRENs: Jorge Merchán from CEDIA (Ecuador), Fernando Aranda from CUDI (Mexico), and Andre Landim and Ivan Tasso from RNP (Brazil).

"The expert level of the course was a big plus", explains RedCLARA's Service Manager, Carlos González. "The course aimed to empower the regional academic sector in technical and legal aspects regarding the work of CSIRTs. The initiative arose from recognizing the disparity in the quantity and maturity of academic CSIRTs in our region. In countries like Brazil, many institutions have implemented these centers, but in others, the situation is completely different. The good news is that Universities recognize this need and are working out how to deliver it," he emphasizes. The case of the Autonomous University of Carmen (UNACAR) in Mexico is illustrative. Its representative, Erika Sánchez Chablé, highlighted the significance of the course. "The training was invaluable, particularly in light of UNACAR's current evaluation phase for implementing a CSIRT. The insights gained will inform a proposal to be presented to senior management for approval. The workshop has

provided me a global vision of what is required for implementing a CSIRT: the processes, procedures, tools, and technologies needed to detect, analyze, and respond to security incidents quickly and effectively," says the expert. According to Chablé, addressing cybersecurity in the educational universe is a major challenge due to the different types of user profiles in universities and their specific needs. González added that the challenges go beyond purely technological aspects. "In some universities, the person in charge of deploying servers, for example, is the same who is responsible for maintaining cybersecurity. As a result, cybersecurity is often pushed to the sidelines. Have a person or a team dedicated to the cybersecurity area could increase the operational costs for the institution, especially when you consider that these are people with specialized profiles, which are scarce in our region in particular."

## The importance of collaboration

What do you do when human and financial resources are scarce? For the Information Security Manager of the Ecuadorian NREN, CEDIA, Jorge Merchán, the training provided valuable opportunity for collaboration and the exchange of best practices and knowledge that can improve both the creation of new CSIRTs in the region and the maturity of those already established. "One of the keys to success is to improve regional cooperation between different CSIRT teams. This allows us to share information about



threats, align standards and best practices, strengthen regional resilience, support each other in crises, create projects, and have a regional presence," he points out. González adds that RedCLARA, LAC4, and EduLACSeg will continue working with national networks to promote collaboration and consequently the consolidation of new CSIRTs in the region. "We aim to create complementary courses and deliver them to the region. The EduLACSeg group also prepares material to support national networks in their local cybersecurity efforts. Furthermore, we are working on a project, with the European Organization for Nuclear Research (CERN) to exchange intelligence information to prevent cyberattacks in Latin America. In addition to this technological deployment, we are training people to use these tools," González concludes.

### Background

The "Training for the Creation and Operation of CSIRTs in the Academic Sector" is part of the alliance between RedCLARA and LAC4, formalized in November 2023 when the regional advanced network became an official member of the cyber capacity center. The alliance aims to strengthen bicontinental cooperation and technical assistance in cybersecurity for the NRENs of the region. This vital step allows RedCLARA to contribute its experience to the governance of the Cyber Competence Center, take advantage of the connection and articulation with the academic sector for the development of training and maturity plans for cyber incident response teams, align objectives and experience with policies and improve trust in collaboration with partners across borders.

In addition, RedCLARA's participation in LAC4 materializes the cooperation proposals of the Memorandum of Understanding between RedCLARA and the Information System Authority of the Republic of Estonia (RIA), signed in 2022, to improve cybersecurity professional development in the region through the exchange of best practices and capacity development.

Formally established in November 2022, LAC4 is part of the EU CyberNet project, implemented by RIA, and contributes to the development of cybersecurity resilience and secure digital transformation in Latin America and the Caribbean



## Confirming 'clichés', LaCoNGA completes its first cycle looking towards the future

Luiz Rasseli

"Never despise small beginnings" seems a fitting adage to describe the inception and impact of the Latin American Alliance for Capacity Building in Advanced Physics, or simply LA-CoNGA Physics, a project that has been working since 2020 to build capacity for the use of supercomputing in the study of astroparticles in the region.



Started as an initiative of Colombian and Venezuelan students pursuing a doctorate at the European Organization for Nuclear Research (CERN) and other institutes in Europe, who wanted to "give back" to their colleagues in Latin America the opportunity to access the modern resources they had at their disposal, with the support of the European Union's Erasmus Programme, LA-CoNGA was transformed into a grand project.

LA-CoNGA involves nine universities in Latin America and Europe, with scientific and academic partners such as CERN itself, the French National Center for Scientific Research (CNRS), the Deutsches Elektronen-Synchrotron (DESY) in Germany, the International Centre for Theoretical Physics (ICTP) in Italy, the Institute for Research on the Fundamental Laws of the Universe (IRFU), and RedCLARA, as well as industrial partners like the Italian instrumentation company CAEN and data science startups, to contribute to the modernization, accessibility, and internationalization of higher education in countries like Colombia, Ecuador, Peru, and Venezuela.

"What these doctoral students did was to seek to contribute to the development of our students, in a programme that was initially named the Virtual Center for Advanced Studies in High Energy Physics (CEVALE2). The initiative consisted of a series of postgraduate high-energy physics courses that were taught from Europe," explains Professor and one of LA-CoNGA's coordinators, Luis Núñez.

Over time, the desire to contribute to their region grew even more than expected. From the seed of CEVALE2 emerged LA-CoNGA, which currently offers a master's programme in areas such as instrumentation, physics, and data science, in which about 50 students from the Industrial University of Santander and Antonio Nariño University (Colombia), San Francisco de Quito University and the University of Experimental Technology Research Yachay (Ecuador), National University of Engineering and San Marcos University (Peru), and Central University and Simón Bolívar University (Venezuela) have already participated.

Through LA-CoNGA, these students can receive classes from experts from the

Universities of Paris and Paul Sabatier, both in France, and the Technical University of Dresden, in Germany, strengthening inter-institutional relationships between Europe and Latin America within the virtual research and learning community and promoting convergence in the advanced physics curriculum offerings at higher education institutions.

Three cohorts have been conducted so far, between 2021 and 2023, involving 30 instructors from Latin America and Europe, and there are already over 200 classes available in open access, including videos, documents, notebooks, and data sets.

#### Past and Future Challenges

After the project's formalization and its application and approval to receive support from the Erasmus Programme in 2019, the LA-CoNGA Physics team faced a major challenge in its early days: the Covid-19 pandemic. "This created many difficulties, such as the impossibility of face-to-face meetings and access to universities, the limited internet bandwidth in our cities, and the time commitment conditions of postgraduate students in the region." The solution, according to Núñez, was collaboration. "We began to look among research groups in Latin America to see what resources they were using, what remote education equipment could be shared, and thus we managed to move forward," recalls the academic.

It was only at the end of 2021 that LA-CoNGA could effectively take the first steps related to purchasing equipment

and creating laboratories to have an infrastructure like the one that was planned by its proponents. The first in-person laboratory practices took place in 2022, and the consolidation of technical staff training for the new remote instrumentation laboratories occurred in 2023. All this experience, however, was not in vain.

"Among other things, we are proud to have not only resisted the pandemic but also to have used a number of lessons learned to be able to put forward new initiatives. Moreover, the pandemic forced us to look ahead, to think about how to make LA-CoNGA sustainable once we no longer have Erasmus funding, which is currently the case. The conclusion was just one: it is necessary to share human and technological resources. We continue to operate because there is a community of colleagues in Peru and Ecuador who are working. That is the key to continue growing," says Núñez.



Luis Núñez



And as "unity makes strength," LA-CoNGA now has instrumentation laboratories installed in all participating universities in Latin America. In this same spirit, the collaborative work of the laboratories is joined by the capacities and services of two other important allies in the region: RedCLARA and the Advanced Computing System of Latin America and the Caribbean (SCALAC).

We are very happy to collaborate with such a relevant project within the digital ecosystem that is forming in our region," celebrates SCALAC President Carlos Jaime Barrios Hernández.

For Luis Núñez, RedCLARA and SCALAC have been fundamental allies for LA-CoNGA's success. "Without these capabilities, we could do very little; our work would be much more complicated.



The advanced Latin American network cooperates with the MiLAB platform, a service created to support the management of data, research codes, and communications of research groups, facilitating collaborative work and ensuring the preservation, availability, and confidentiality of their information. SCALAC, in turn, provides supercomputing capabilities for capturing the information researchers need. "Our relationship with LA-CoNGA dates back to the beginning of the project's activities, and many SCALAC members are formally involved in it.

But RedCLARA and SCALAC go beyond; these two networks are 'people meeting places,' community creation, and that's what we're looking for," he concludes.

Therefore, LA-CoNGA's activities have already expanded beyond classes and laboratories, encompassing other initiatives such as seminar series, tutoring, workshops on scientific communication, and transversal initiatives with other communities, such as the Co-Afina Hackathons, citizen science projects with regional institutes.

## Next Steps

If the obstacles have been overcome, the order now is to keep moving forward. In this regard, LA-CoNGA team has already defined what the next step in this journey will be: EL-BONGO, the E-Latin America Digital Hub for Open Growing Communities in Physics.

Based on the lessons learned in LA-CoNGA, the initiative seeks to drive the digital transformation of higher education by promoting virtual research communities in Latin America, with the addition of researchers and experts from other universities and countries like El Salvador, Honduras, and Guatemala. "Imagine 'congas' adapted to different communities, aiming for targeted and research-focused training in areas like astroparticles, high-energy physics, high-performance computing, and seismology. Our dream is to develop technologies adapted in each of these Latin American communities. Moreover, to create capacities to build instruments. The idea is to promote what we call 'FabLabs,' fabrication laboratories with science, so that students can build low-cost scientific instruments," envisions the coordinator.

EL-BONGO also aims to develop a hybrid and flexible Master's Programme based on mini-training modules with institutional validation through blockchain infrastructure, the creation of an Open Science Collaboration Center, developing digital platforms for e-Learning, research databases



and virtual laboratories, collaboration platforms, and networking for students, educators, researchers, and industry professionals throughout Latin America and beyond. Among international partners, EL-BONGO already has partnerships with the University of Paris Cité, the University Paul Sabatier, in Toulouse, and the National Institute of Applied Sciences of Lyon (INSA Lyon) in France, as well as the University of Salamanca in Spain. A true global community committed to the development of Latin American research, proving that if adages exist, it's for a reason.

# RUTE-AL webinar series aims to promote interregional cooperation in health and telemedicine

Luiz Rasseli

Going beyond traditional virtual events, the webinar series of the Latin American University Telemedicine Network (RUTE-AL), from April to November, aims to strengthening the permanent collaborative work in the region.

To date, the webinar series is in its fifth session of a total of fifteen planned. There are two monthly sessions in which multidisciplinary panelists are participating, chosen among experts and professors from the member institutions of RNIEs that make up RUTE-AL, such as RNP (Brazil), CEDIA (Ecuador), RENATA (Colombia), CUDI (Mexico) and REUNA (Chile).

The meetings are addressing the technical-scientific and regional vision on topics divided in two areas. The first is the Health Special Interest Group (SIG) h, which will address the most relevant current health issues, such as the care of indigenous peoples, the health of refugees and migrants, and the origins of health and disease development (DOHaD), among others. The second is

the Digital Health SIG, which will address specific ICT challenges for health transformation, including the use of Artificial Intelligence, data governance, and interoperability in the region.

"We have chosen topics that are important for Latin America and the Caribbean, that are referenced in the technical-scientific literature, and where the existence of a collaborative networks among governments, academia, and companies is crucial to find solutions," explained Paulo Roberto de Lima Lopes, digital health specialist at the Brazilian Research Network (RNP). According to the expert, the benefits of the webinar series include the creation of collaborative networks. "The opportunity to attend the sessions, update their knowledge, and then participate in the collective discussions allows participants to expand their collaborative network and find regional synergies for their local professional performance," he points out.

In this sense, RUTE-AL webinars are designed to engage different audiences, including researchers, academics, students, professionals working in health systems, companies, technical-scientific organizations, and government representatives in areas such as telecommunications, science, technology and innovation, among others.

According to RedCLARA's Academic Relations Manager, Tania Altamirano, collaboration among the different

actors part of the health and e-health systems is essential to strengthen telemedicine in our region. "Firstly, it allows the exchange of best practices, knowledge, and experience among countries, which can help identify innovative solutions. In addition, regional cooperation facilitates the creation of networks of experts and health professionals, fostering strategic partnerships. Finally, it makes it easier to address common challenges such as interoperability of health systems, regulation and security of health information. In summary, by working together at the regional level, we can better harness the potential of telemedicine to improve access to healthcare and the quality of health services in Latin America and the Caribbean," she emphasized.

Participation in all the events of the RUTE-AL Webinar Series is free of charge but requires prior registration. To obtain further information, review the agenda of activities and to find out how to join these important discussions, please visit the RUTE-AL page on the RedCLARA website at <https://redclara.net/es/colaboracion/conozca/rute-al>.



# Guatemala: BELLA II off to a strong start

Ixchel Pérez

The celebration of Europe Day in Guatemala was the setting for the presentation of the opportunities that the BELLA II project will bring to the country in terms of connectivity and cooperation in science and technology, as well as the synergies it will bring with the Copernicus Earth Observation Programme, including the Copernicus Academy.

BELLA II, implemented by RedCLARA and co-funded by the European Union (EU), and Copernicus are pillars of the Digital Alliance between the EU and Latin America and the Caribbean (LAC), signed a year ago, and are one of the main commitments of the Global Gateway strategy, through which the EU aims to contribute to responding to the most pressing global challenges, such as the fight against climate change.

The event, which took place in Guatemala City on 6 May, brought together one hundred representatives from government agencies, international cooperation, European companies, partners, and key EU projects in the country. RedCLARA was represented by Mark Urban, RedCLARA's director of International Cooperation, Academic Relations, and Communication; Laura Castellana, Academic Projects Coordinator; Ixchel Pérez, Editor and International Relations Consultant for Central America; and Cecilia Ortiz, Manager of Liaison with National Research and Education Networks (RNIE).

RedCLARA, as leader of BELLA II, presented an information stand on the project, highlighting that it is a regional initiative that aims to reduce the digital divide and support the development of the necessary infrastructure to consolidate and expand a digital ecosystem of science, technology, education, and innovation in the region. He also stressed that the project aims to promote the development of innovative projects that respond to regional challenges, with the participation of different sectors.



In the first phase, the BELLA program directly connected Latin America to Europe via an undersea cable and terrestrial infrastructure located in South America. This unprecedented connectivity boosted collaboration, data transfer, science, and innovation between the research and education communities in both regions. The BELLA II project will extend connectivity and opportunities to as many countries in Latin America and the Caribbean as possible, with Guatemala being one of the priority countries, along with Peru, Costa Rica, El Salvador, and Honduras.

"The BELLA II project, by strengthening the connectivity between RedCLARA and the member countries, will improve access to Copernicus data, so that the governments of the connected countries, the private sector, academia, and the different actors of the digital ecosystem can use Earth observation information quickly and promptly to promote development projects," said Mark Urban, Director of International Cooperation, Academic Relations and Communications of RedCLARA and part of the organization's team present in Guatemala.

## Copernicus Academy

One way to improve access and capacity to use Earth observation data is the "Copernicus Academy Latin America and the Caribbean", promoted by RedCLARA and the NRENS.

In the framework of the visit of the representatives of the Latin American advanced network to Guatemala, and

coordination with the EU delegation, a meeting was held with key stakeholders to present the Copernicus Academy deployment strategy.

"From RedCLARA, in the framework of BELLA II, we want to promote the Copernicus Academy in Guatemala, to improve capacity building and knowledge management in thematic areas of Earth observation, allowing the adoption of Copernicus data in new sectors, thus reducing the gap between skills and the use of data in the country", explained Laura Castellana.

The meeting took place on 7 May and was attended by more than 30 representatives from academia, government agencies and the private sector. As a result, a roadmap was drawn up for the implementation of the Copernicus Academy in Guatemala, starting in June, with the commitment of the different sectors.

RedCLARA representatives also held bilateral meetings with the EU Delegation and the National Secretariat for Science and Technology to articulate efforts to establish the Copernicus Academy, promote BELLA II, and strengthen the national research and education network.



community," said the Academic Projects Coordinator. "This event is an invaluable platform to learn from others and to demonstrate how Latin America and the Caribbean are advancing in science and education through technology."

The TNC24 conference took place from June 10 to 14 in Rennes. This annual event, organized by GÉANT, the European advanced network, brings together leaders, experts, and professionals from the technological and academic fields worldwide to share knowledge and experiences and discuss the latest developments in research and education networks.

RedCLARA presented its initiatives and projects that are transforming the landscape of academic and scientific collaboration in Latin America. Among the key topics addressed in its presentations and panels were regional connectivity, international collaboration projects, technological innovations, and education and training.

Additionally, there were specific sessions about key topics such as cybersecurity in research and education, Earth observation, and routing network protection.

In the session "Walking as a Team: Collaborative Security Actions in

## RedCLARA joins the TNC24 conference in France

RedCLARA, Latin America's advanced network for research and education collaboration, will attend the Transnational Networking Conference (TNC24) next week. This year, the French National Research and Education Network (RENATER) hosted the conference. .

Jenny Flores

This participation not only provided the opportunity to showcase the region's achievements but also to establish new strategic alliances and strengthen existing ones with global networks and institutions.

The team representing RedCLARA at this event consisted of Laura Castellana, Academic Projects

Coordinator; Tania Altamirano, Academic Relations Manager; Carlos González, Services Manager; and Tiago Monsores, Principal Network Engineer.

"We are thrilled to participate in TNC24 and have the opportunity to share our experiences and achievements with the global





Research and Education," initiatives from the Latin America and Caribbean regional cybersecurity group were discussed, involving collaboration between RedCLARA, CERN, and GÉANT to form a coordinated front against the growing challenges in the digital world.

Carlos González moderated the session, inviting attendees to resume, replicate, or inspire new collaborations to form a united and multifaceted front against significant challenges in this field.

"The security strategy is crucial for organizations; however, the shortage of experts and resources, coupled with the multilevel structure of security teams, represents a real

challenge for many research and education institutions that must be addressed comprehensively and collaboratively," indicated the specialist.

After the session, which included an incident response exercise, attendees confirmed that collaborative work between different organizations, prior preparation activities, and trust between parties are necessary to contain these increasingly global cybersecurity risks.

In the session "Gifts from the Heavens," Laura Castellana presented the Earth observation strategy, highlighting the capabilities and skills developed in Latin America, the Caribbean, and Europe through

the Copernicus Academy program.

Tiago Monsores spoke about how RedCLARA is protecting the research and education networks of Latin America and Europe. He also explained how the RedCLARA engineering team has applied the Mutually Agreed Norms for Routing Security (MANRS) and achieved a perfect score of 100%.

Finally, Tania Altamirano moderated the session "Let's Talk About Digital Health Transformation," where representatives from RUTE-AL, RedCLARA, and GEANT discussed digital health interventions. They addressed the advances since 2023 and future plans, using the BELLA II project as a reference for more opportunities.



Visit <https://tnc24.geant.org/> for more information about the presentations, participants, and the event.



## Bolivia learns more about RedCLARA and BELLA II, and makes progress in the development of the Copernicus Academy

Luiz Rasseli

Mark Urban, Director of International Cooperation, Academic Relations, and Communications, and Laura Castellana, Coordinator of Academic Projects, of the Latin American Cooperation of Advanced Networks, RedCLARA, participated in a series of meetings and events in La Paz, Bolivia, on May 20 and 21.

The aim of the visit was to discuss Bolivia's potential integration into the regional advanced network and the BELLA II project under the EU-LAC Digital Alliance. It was also to support

the dissemination and construction of a roadmap for promoting the Copernicus Academy at the national level, an initiative to improve access to and use of data from the European Union's (EU) Earth observation programme, Copernicus.

The meetings and events were coordinated with the Vice Presidency of Bolivia and were attended by ministers, EU representatives, university rectors, and NGO representatives, among others. "We are conveying the value and

importance of the country's integration into the regional and international community, which benefits from the infrastructures constituted by Research and Education Networks (NRENs). In Latin America, through RedCLARA and its member NRENs, and globally through other regional networks also connected with RedCLARA," highlighted Mark Urban. According to Urban, participants received the meeting positively. They agreed on the importance of moving towards a country project allowing integration with RedCLARA and BELLA II. The next step would be to form a National Committee to lead the process.

Bolivia's potential integration into RedCLARA would promote collaborative work in science, education, technology, and innovation, participation in regional and global research projects, and capacity-building activities using connectivity and digital tools, among other benefits.

### Copernicus Academy

One of the primary outcomes of the visit was the development of the second phase of the implementation strategy of the Copernicus Academy in Bolivia, with the holding of a face-to-face workshop and the commitment of stakeholders to move towards the third phase: the formation of a national committee for establishing and implementing the Academy. The fourth phase would involve conducting a pilot project using Earth observation data to

develop solutions for a country's challenge. "RedCLARA's strategy for developing the Copernicus Academy in the region includes technical assistance, so that even countries that no have an NREN can join the initiative and create a local academy," emphasized Laura Castellana.

Currently, Bolivia already works with satellite data observation through the Bolivian Space Agency (ABE), which processes data from the national satellite and delivers it to organizations responsible for its use in agriculture, planting, and fire prevention. "We expect that the Copernicus Academy will enhance the use and benefits of these observation activities", added Castellana.

The Copernicus Academy is driven by RedCLARA and its member NRENs and aims to boost capacity development and knowledge management in Earth observation topics.



# Dialogue fostered cooperation on digital governance

Ixchel Pérez



Cross-border interoperability, cross-border electronic identity and signature, and modern digital public services were the key themes of the "Policy Dialogue on Digital Governance" organized by the European Union-Latin America and Caribbean (EU-LAC) Digital Alliance in San José, Costa Rica, on 15-17 May.

Co-chaired by the European Commission and the governments of Costa Rica, Guatemala, and Estonia, the dialogue brought together more than 100 representatives from 37 countries, including senior government officials and a wide range of stakeholders, to discuss priorities and draw practical conclusions in

the field of e-governance, to define a common agenda and roadmap for bi-regional cooperation.

The opening was led by Paula Bogantes, Minister of Science, Innovation, Technology and Telecommunications of Costa Rica; Felipe Zaccheo, Head of Unit of DG INTPA EU; Edie Cux, Executive Director of the Presidential Commission for Open and Digital Government of Guatemala; Margarita Balseiro Lopes, Minister for Youth and Modernisation of Portugal (via video message); Hannes Astok, Chairman of the Board of the e-Governance Academy (eGA) of Estonia; and Juan Alfaro, Executive President of INA.

In their welcoming remarks, they underlined the importance of interoperability to improve the delivery of public services and promote interregional cooperation, as well as the importance of strengthening standardization, data exchange protocols, interoperable processes, and systems to achieve the benefits of digital transformation in a multi-state environment.

Participants learned about successful experiences in open government, cross-border digital identities and signatures, digital services, and other related topics. They shared knowledge and best practices in various working tables, including dedicated spaces to address the specificities and challenges of the sub-regions (South America, Central America, and the Caribbean). Representing RedCLARA at the dialogue were Mark Urban, Director of International Cooperation, Academic Relations, and Communications, and Ixchel Pérez, Regional Editor and International Relations Advisor, who highlighted how RedCLARA and the BELLA II project can provide opportunities to strengthen cross-border projects and public services of value to societies.

The dialogue also highlighted two cross-cutting issues for the sustainability of digitalization: digital citizenship and ICT governance. In this regard, it was stressed that an efficient and effective governance structure to support digital transformation must consider civil

society organizations as partners and active actors in the digital agenda.

The importance of e-governance to ensure the integration of cybersecurity, data governance, and connectivity was also underlined. This contributed to the creation of sound digital policies that focus on security, accessibility, and service efficiency.

The dialogue on digital governance was part of a series of high-level policy dialogues of the Digital Alliance. These dialogues were built on the conclusions of the Cartagena Conference in Colombia in November 2023 and aimed to reach agreements at the political level ahead of the EU-CELAC Summit in 2025. The dialogues also covered cybersecurity and artificial intelligence.



## RedCLARA High Performance Computing initiatives highlighted at international event

Luiz Rasseli

RedCLARA and the Latin American and Caribbean High Performance Computing System (SCALAC) showcased collaborative initiatives leveraging high-performance computing (HPC) for research and sustainable development in Latin America and the Caribbean at the ISC High Performance 2024 conference. The event, held from 12 to 16 May in Hamburg, Germany, brought together industry professionals, academics, and researchers from around the world.

Representing RedCLARA were Carlos González, Manager of Services, and Tania Altamirano, Manager of Academic Relations, who presented the regional advanced network's initiatives during the session "HPC in Latin America". The panel, attended by nearly 40 participants, also featured Guilherme Correa, General Coordinator of Digital Technologies at the Brazilian Ministry of Science, Technology, and Innovation; Fabrizio Gagliardi, Director of International Relations at the Barcelona

Supercomputing Center (BSC); Carla Osthoff, a researcher at the Brazilian National Laboratory for Scientific Computing; and Philippe Navaux, Professor and President of SCALAC.

In her presentation, "Bridging EU-LAC Collaborative Initiatives," Altamirano outlines the collaborative efforts between Europe and Latin America and the Caribbean, emphasizing the key role of RedCLARA. "RedCLARA's HPC activities are carried out in collaboration with SCALAC, an organization that emerged from the GISELA Project, which we have been officially supporting since 2019. SCALAC coordinates and defines strategic actions with its European and global partners. Notable initiatives include workshops at ISC, where we presented and discussed joint projects between Europe

and Latin America, and the Latin American HPC Conference (CARLA), held annually since 2013. Through SCALAC, we have also supported training projects such as summer schools in Argentina, Brazil, Chile, Colombia, Costa Rica and Mexico, as well as international experiences such as the SC Camp in the United States," Altamirano explained.

Altamirano also shared an example from the COVID-19 pandemic, during which RedCLARA and SCALAC supported the integration of HPC resources across Latin American centers to transfer biological data and support virus studies securely. The initiative involved the participation of Brazil's Laboratório Nacional de Computação Científica (LNCC), Chile's Laboratorio Nacional de Computación de Alto





Rendimiento (NLHPC), Colombia's SC3UIS (Supercomputación y Cálculo Científico UIS), and Mexico's Centro de Investigación y de Estudios Avanzados (CINVESTAV), as well as medical institutions from the continent.

Philippe Navaux, President of SCALAC, highlighted RedCLARA's crucial support from the beginning of SCALAC's activities, which is essential for the development of HPC and for future successes. "RedCLARA has been a key ally in SCALAC's plans, both institutionally and technologically, providing human resources, logistical support, and the interconnection needed for HPC groups to develop high-level projects and research," Navaux emphasized.

Key projects include the Latin American Giant Observatory (LAGO), with 17 particle observatories linked by RedCLARA's infrastructure and SCALAC's capabilities. "LAGO utilizes SCALAC-connected centers, such as the one at the Industrial University of Santander, to process and analyze data," explains Carlos González. Another important project is LaConga Physics (Latin American Alliance for the Strengthening of Advanced Capacities in Physics), which aims to develop the capacity to use supercomputers in studying astroparticles.

According to Tania Altamirano, these collaborative initiatives are shaping the global HPC landscape and will gain momentum with the transformative impact of the BELLA II project. The project aims to bridge the digital divide and support the development of the necessary infrastructure to consolidate and expand a Latin American and Caribbean ecosystem of science, technology, education, and innovation.

"Through BELLA II, we are promoting high impact with other regions in terms of strategic actions and alliances. With all the work around the Europe-Latin America Digital Agenda, all the HPC resources provided by SCALAC are critical in generating strategic lines of development in AI, cloud computing, deep learning, quantum computing, etc. Our next steps include strengthening policies to ensure sustainability and increasing collaboration between Latin America and the Caribbean with Europe, Asia, and other regions," concluded Altamirano.



## The development of a digital agenda for Central American food safety continues

Jenny Flores

As a follow-up to the outcomes of BELLA Ideathon and in an effort to resolve food insecurity issues in the region, a virtual workshop "Building Solutions for a Resilient Ecosystem in Central America" was organized.

The event was coordinated by the European Union, RedCLARA, the BELLA II initiative, with the assistance of FAO, GIZ, IICA, LACNET, and GÉANT.

Over thirty specialists from diverse institutions participated actively in the initial phase of a sequence of endeavors aimed at establishing a Digital Agenda for Food Safety. This workshop initiates a collaborative and collective effort to develop proposals on the subject in Central America. It also serves as a preliminary stage for the forum, which is scheduled to occur on May 7 and 8 in San José, Costa Rica.

The opening emphasized the value of collaboration and the strategic direction of the BELLA II Project and RedCLARA investments for the creation of a secure digital platform.

"Central America faces multiple food challenges, and the creation of this digital agenda is essential to addressing them effectively," said Luis Cadenas, executive director of RedCLARA. "The goal is to actively contribute to the construction of this agenda, providing innovative and sustainable solutions. We have great capabilities, but we must promote coordination, and these activities help sustain it," he added.

The workshop, according to Leonel Tapia, the Technical Advisor of GIZ, aimed to implement "grounded" solutions through a constructive and collaborative process. This entails working in coordination, integrating agendas and projects, and paying attention to the options that technology presents in the continent's

digital transformation process. "Without resilient agri-food systems, there is no life," he said.

The workshop organized work tables around four key thematic axes: (1) agricultural policies; (2) environmental sustainability; (3) digital transformation technologies in agriculture; and (4) research and development from a gender perspective.

The working groups drew inspiration from the ideas, perspectives, and roles shared during the BELLA II Ideathon last March. RedCLARA, the BELLA II project, and the European Union organized the BELLA II Ideathon: Innovation of Agri-Food Systems in Central America and the Caribbean, with support from FAO, GIZ, IICA, LACNET, GÉANT, and ESA.

"The Ideatón provided us with valuable ideas and technological solutions to address climate change in agriculture, and this day is the starting point, as it helps us identify common areas and scalable solutions," explained Laura Castellana, RedCLARA Project Coordinator.

As the main conclusions of the preparatory workshop, the tables highlighted various initiatives in the region that can be promoted: in the field of digital transformation technologies in the agricultural sector, the implementation of a drought monitoring system in agriculture, the exploration of greater sources of funding, the creation of early warning systems with weather stations connected to sensors that monitor nitrate levels in the soil, the promotion of carbon markets, and

the establishment of water quality monitoring systems.

The axis of environmental sustainability emphasized the importance of replicating nature-based solutions and the need to consider social factors as implementation limitations. Similarly, we emphasized the significance of generating solid data to inform the design of evidence-based solutions.

The Digital Agenda for Food Security's goal is to use it as a powerful tool to improve Central America's food situation.

As one of the four main components of the EU-LAC Digital Alliance, the Digital Agenda on food safety for the region of Central America and the Caribbean continues to be implemented within the context of the BELLA II project, which is financed by the European Union and administered by RedCLARA.

The proposals will be evaluated during The Forum of the Digital Agenda on Food Safety in Costa Rica, with the objective of determining the precise actions that will be executed in accordance with the aforementioned Agenda.





## Fifth Dialogue of BELLA II focused on the creation of co-investment consortia

Luiz Rasseli

Under the theme "The Role of Universities and R&E Networks in Building a Viable, Sustainable, and Impactful Digital Future in Latin America and the Caribbean," the BELLA II Open Strategic Dialogue, held on 8 April in Yucatán, Mexico, was organized by RedCLARA and the University Corporation for Internet Development (CUDI), with the support of the Autonomous University of Yucatán (UADY) and the Internet Exchange Services Yucatán (IXSY). Representatives from government, business, and academia attended it.

The dialogue, attended by representatives from government, business, and academia, was a platform to discuss the strategic vision of the role of universities, businesses, government, civil society, and National Research and Education Networks (NREN) in facing of the challenges of the digital economy. The objective was to produce a roadmap that will enable them, within the framework of the BELLA II project and the EU-LAC Digital Alliance, to contribute significantly to the sustainable

development of a data-driven, people-centered digital ecosystem that drives innovation, knowledge management, and bi-regional socio-economic development.

Expert participants included Mark Urban, Director of International Cooperation, Academic Relations, and Communications at RedCLARA; Moisés Torres, Director General of CUDI; Salma Jalife, CEO of Centro México Digital; as well as the Rector of the Autonomous University of Yucatán, Carlos Alberto Estrada Pinto, and the Director General of Internet Exchange Services Yucatán, María del Carmen Denis Polanco. They gave presentations on, among other things, the objectives and tasks of BELLA II and its potential benefits for Mexico.

The event continued with the formation of working groups to discuss topics such as financing and sustainability, governance, innovation, data and computing capacity, digital skills and human capital development, and connectivity.

The BELLA II Open Strategic Dialogue II in Mexico was the fifth in a series of events launched in 2023, having already visited Belgium, El Salvador, Panama, and Colombia, aiming to facilitate and promote the participation and co-investment of actors in the digital ecosystem. The BELLA II Project, implemented by RedCLARA and funded by the European Union, aims to reduce the digital divide and support the development of the necessary infrastructure to consolidate and expand a digital ecosystem of science, technology, education, and innovation in Latin America and the Caribbean. This initiative is one of the pillars of the EU-LAC Digital Alliance.

For further information, please visit <https://bella-programme.eu>

# Patagonia Project connects southern tip of continent with R&E Networks

In the Field / REUNA Chile

The Southern Macrozone of Chile is one third of the country's surface and holds significant scientific potential with both national and global impact. It plays a strategic role in addressing the Climate Crisis and possesses global comparative advantages (Ice Fields, Antarctica, subantarctic and pristine territory). However, until recently, it was one of the few geographical areas on the planet disconnected from Global Research and Education Networks.

(Source: In the Field / REUNA) In response to this need, the Chilean National Research and Development Agency (ANID) and the Chilean NREN, REUNA, joined forces to execute the Patagonia Project. This initiative aims to meet the connectivity requirements of knowledge-generating institutions in the Southern Macrozone of Chile and transform the region into a hub for global development and research.

The project has an initial investment of around 900,000 US dollars and involves the implementation of two Points of Presence (PoP) for REUNA in the cities of Coyhaique and Punta Arenas, respectively, to connect them to the REUNA backbone in Puerto Montt. These new segments involve deploying 1,310 km of network,

representing a 42% increase in the territorial coverage of the current digital infrastructure of the Chilean NREN.

The potential beneficiaries of this project include all universities, vocational training centers, and research centers present in the Chilean Patagonia. Additionally, there is an expectation to connect international scientific agencies and centers based in Punta Arenas for their aerospace programs.

In September 2022, the inauguration of the first PoP took place in the city of Coyhaique, and the implementation of the node in Punta Arenas is scheduled for the first trimester of 2024.

"The Patagonia Project is the first step for the Aysén and Magallanes regions to have a digital infrastructure dedicated exclusively to science and education, interconnected nationally and internationally, that consolidates the Southern Macrozone as a pole of development and creation of global knowledge. The next stage of this dream is to integrate the Patagonia network with other initiatives to connect the Antarctic territory with the rest of the world through Chile," said Paola Arellano, Executive Director of REUNA.



## Connectivity to Antarctica

REUNA at the Chilean level and RedCLARA at the Latin American level are working intensely to promote and establish connectivity to Antarctica through Punta Arenas. Thanks to the Patagonia Project, this city will host the southernmost Point of Presence (PoP) on the planet in terms of connectivity for science and education, and it will be the closest city to Antarctica. Moreover, national Antarctic programs from more than 20 countries use Punta Arenas as the gateway to the continent, more than any other city in the world.

For this reason, it is the chosen location for the construction of the future International Antarctic Center (CAI), designed to promote knowledge and dissemination of the

white continent. It will also facilitate scientific research, contribute to the global positioning of the Magallanes capital as the main "gateway" to Antarctica, and provide logistical support for future polar expeditions. The project is valued at over 80 million dollars and is driven by the Regional Government of Magallanes and Chilean Antarctica, the Ministry of Public Works, and the Chilean Antarctic Institute.

On this strategic path for the development of global science, the intentions of the European Union and Chilean entities to support this process have already been expressed. Both networks are working on a plan to make this action a reality.



## Copernicus Regional Center in Chile: real-time data management to overcome global challenges

In the Field / REUNA Chile

As part of the new Digital Alliance between the European Union and Latin America, the Copernicus Regional Center for Earth Observation was introduced. This initiative aims to strengthen the Copernicus Data Repository developed in Chile, extending its services to all of Latin America and the Caribbean (LAC).

(Source: In the Field) This milestone will enable more intensive and widespread use of the European program's data. This information will not only be useful in overcoming global challenges but also applicable to specific needs of each country, such as environmental policy development,

identification of geological risk areas, smart city design, and decision-making in emergency situations like natural disasters or humanitarian crises.

In this regard, Margrethe Vestager, the Executive Vice President of the European Commission, stated at the project launch event, "We believe that strengthening the center will have a very relevant impact on Chile and the region. The data provided by Copernicus, the world's largest Earth observation program, can be used for specific applications with significant commercial and social value. For instance, for real-time management of coastal, mining, and agricultural resources, as well as for preventing or managing risks associated with climate change and natural disasters."

The Regional Center also aims to provide localized regional services, using Earth observation data as well as in-situ information from LAC countries. To achieve this, the initiative will work in synergy with the Copernicus Regional Center in Panama, leveraging high-speed connectivity provided by the BELLA project and regional and national research and education networks.

"Thanks to the work carried out by RedCLARA and its national networks under the BELLA project, the research and education communities in Latin America and the Caribbean have a 100 Gbps ring, ensuring top-level connectivity so that users in Chile and across the region can access

the data and applications offered by this new center quickly and securely", stated Paola Arellano, Executive Director of REUNA.

In addition to the social and environmental benefits, the data provided by Copernicus can contribute to the economic growth of countries by developing value-added services that meet specific commercial requirements. This leads to new business opportunities, enhancing local scientific and technological innovation.

This initiative will be led by the University of Chile and is funded with four million euros from the European Union.

### International collaboration

To maximize its social value in solving global challenges, the Copernicus program has placed special emphasis on international collaboration through cooperation agreements.

In 2018, the European Commission signed an agreement with the Chilean government, granting access to data generated by Sentinel satellites and the European agencies participating in Copernicus. The implementation was undertaken by the University of Chile, giving rise to the Copernicus Chile Relay, whose aim is to promote the use of data provided by the European program. It organizes training events and seminars where professionals from various fields present their experiences using spatial information, especially from Sentinel satellites.



Additionally, through an agreement between the University of Chile and the European Space Agency (ESA) in 2019, the first Copernicus Hub in Latin America was established in the country. Thanks to this initiative, data is transported directly from the central Copernicus repository in Europe to Santiago through the academic networks Géant (Europe), RedCLARA (Latin America), and REUNA (Chile), allowing Chilean users to access data with time savings of up to 90%.

For more information, go to:  
<https://www.copernicus.eu/es>  
<https://copernicus-chile.cl/>  
<http://www.datoscopernicus.cl/>  
<https://www.bella-programme.eu/>