



CLARA

Cooperación Latinoamericana de Redes Avanzadas

From Platforms to Communities

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Braga, Portugal 24th-27th May 2010



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A project implemented
by CLARA



CLARA: Cooperación Latinoamericana de Redes Avanzadas

1. Argentina,
2. Bolivia,
3. Brasil,
4. Colombia,
5. Costa Rica,
6. Cuba
7. Chile,
8. Ecuador,
9. El Salvador,
10. Guatemala,
11. Honduras
12. México,
13. Panamá,
14. Paraguay
15. Perú,
16. Uruguay
17. Venezuela





Early CLARA's e-Science Initiative 2008-2009

E-CienciAL

Programme for Fostering the Use of the Advanced Networks in Latin America for the Development of Science, Technology and Innovation, project FEMCIDI/CLARA - OAS

Objectives:

- Create and validate a strategic agenda for the development of e-Science in Latin America.
- Augment those scientific and technological working networks that are currently operating over the advanced academic networks
- Enhance the abilities of the scientific community for the identification, creation and execution of competitive projects throughout the advanced academic networks
- To create an information and of collaboration system for science and technology.

Deliverables

- Survey of National capabilities and e-Science projects
- First General E-Science Dialogues of LA Academic Communities
- First e-Science CLARA Workshop and Lima Declaration
- Information System to promote cooperation opportunity through
- Identification of possible e-cooperation areas

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Early CLARA e-Science Initiative 2008: The Lima Declaration

Declaración dirigida a los gobernantes de América Latina.

Reunidos en el Taller CLARA: “Agenda estratégica para la e-Ciencia en América Latina” los participantes hemos coincidido en sugerir a las autoridades de nuestros países que se realicen las acciones pertinentes para crear el “Primer Programa Marco para el Desarrollo de la Ciencia y la Tecnología en América Latina”. La experiencia de la Unión Europea que ya está en su séptimo programa marco (con un importante financiamiento), muestra que el concepto es poderoso y exitoso.

Estamos convencidos de que América Latina necesita el desarrollo de la educación y la ciencia para conseguir el progreso de sus sociedades y su verdadera independencia política, cultural y económica. Estamos convencidos también de que nuestro futuro como región depende de nuestra unidad y decisión y que no debemos esperar de otros lo que nosotros mismos no estemos dispuestos a hacer. Una postura sería colaboradora sin dudas a fortalecer la relación con el resto del mundo, desde una posición de colaboración que de dependencia.

Proponemos que en la próxima cumbre de presidentes se adopte una resolución al respecto que sea seguida de la formación de una comisión técnica encargada de elaborar esta propuesta.

Lima, 7 de noviembre de 2008

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EULAC meeting of ministers of research Madrid 2010



EUROPEAN UNION – LATIN AMERICA CARIBBEAN (EU-LAC) MINISTERIAL FORUM ON SCIENCE, TECHNOLOGY AND INNOVATION

Madrid, Spain, 14th May, 2010

RECOMMENDATIONS

We, the Ministers of Science and Technology of the European Union, Latin America and the Caribbean, gathered in Madrid on the 14th May, 2010,

Aware of the importance of promoting the "LAC-EU Knowledge Area" first mentioned in the Guadalajara Declaration in 2004,

Knowing that the current global challenges for cooperation in Science, technology and innovation focused on sustainable development and social inclusion will be addressed in the LAC-EU Summit in May 2010,

Acknowledging that science, technology and innovation and higher education are vital for all societies and their sustainable development, regardless of a country's size or its inhabitants' level of income,

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EULAC meeting of ministers of research Madrid 2010



EUROPEAN UNION
MINISTERIAL

Special focus should be given to the ICT-based Research Infrastructures (e Infrastructures for short) along two main axes:

1. Connectivity between EU and LAC in order to enable science and R&D cooperation through the improvement of the interconnection of academic networks and the enhancement of transatlantic links, through including new optic fibre cables.
2. E-Infrastructures supporting collaboration in specific research/application domains (energy, environment and climate change, agro-food and health services) by enhancing the access to and use of simulation and supercomputing facilities.

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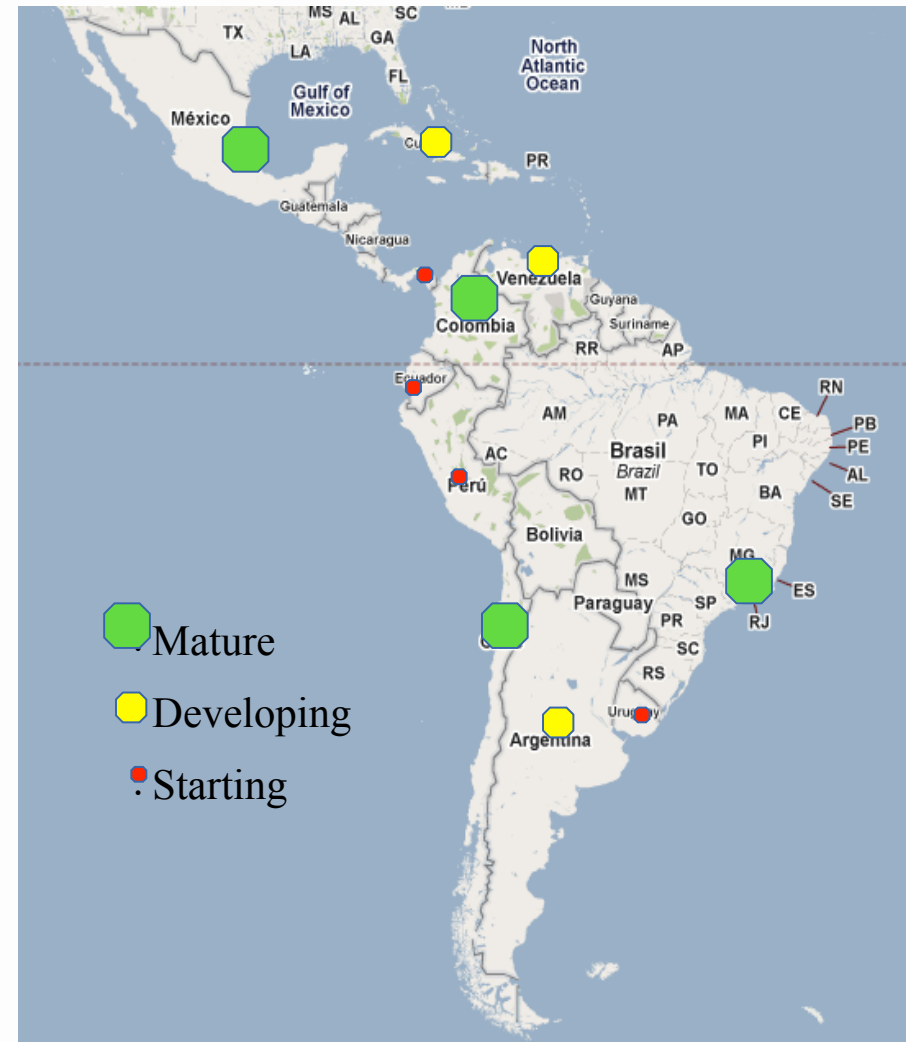


E-Science and VRC maturity in LA as seen by CLARA

NRENs:

- Mexico- CUDI+*
- Cuba+*
- Panama – REDCYT*
- Colombia- RENATA*
- Venezuela – REACCIUN2+*
- Ecuador- CEDIA*
- Peru – RAAP+*
- Brazil - RNP+*
- Chile - REUNA+*
- Argentina – INNOVA|RED+*
- Uruguay - RAU*

+ EELA
* EELA-2





Mature initiatives: Brazil, Chile, Colombia, Mexico

- **Strong Research Communities (BR,CL,MX)**
- **Active JRUs (CL,CO,MX)**
- **Robust Network Infrastructure (BR, CL, CO, MX)**
- **Recognized by Governmental Science and Technology Authorities (Policy/Decision Makers) (CL, CO, MX)**
- **National Integration of NGI/EDGS (CO, MX)**
- **e-Science initiatives**
 - in place (BR,CL)
 - developing (CO,MX)
- **Certification Authorities (BR, CL, MX)**

Brazil



Chile



Colombia



Mexico



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Brazil – Middleware production



- **Mature research on grid middleware**
 - OurGrid
 - Integrate
- **EELA-2 triggered in 2007- Intention letter to promote e-science Initiatives, gathering 17 institutions**
- **RNP involved in several Grid and e-Science initiatives:**
 - EELA and EELA-2
 - RINGrid
 - T2 HEPGRID Brazil,
 - WLCG
 - SINAPAD (“DEISA like”)
 - G-Brams, (Megacities-Climate)
 - DES-Brazil,
 - Galileu VRC



Mexico GRID, Supercomputing & e-Science



Mexican institutions have participated in Grid initiatives:

- .EELA and EELA-2
- .PRAGMA
- .LAGrid
- .HELEN
- .RINGrid

2004 CUDI supports the creation of a Grid community - GRAMA

2008 EELA-2 triggered the creation of the JRU-MEX: 8 institutions + 3 pending

2008 CONACYT supports DELTA METROPOLITANA and LNGSeC projects as national initiatives

2009 CUDI and RENATA invited interested institutions in a dialogue on the future of grids and e-infrastructures in LA

2010 CUDI supports ISUM2010 which renovates Mexico's supercomputing and grid initiatives for e-Science

- 2010 CONACYT triggers e-Science and e-Infrastructures National Initiatives

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Chile GRID involvement



- **First initiative CLGRID since 2006**
- **EELA-2 triggered in 2007 a Collaborative Agreement to promote National Grid Initiatives, signed by 8 institutions**
- **REUNA (JRU coordinator)**
 - **Fosters GRID and e-Science concepts throughout the country**
 - **Involved in several Grid and e-Science initiatives:**
 - **e-Science Congresses**
 - **Integration Workshops**
 - **EELA and EELA-2**
 - **CLGrid**
 - **UCRAV**
 - **RINGrid**

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Colombia towards an NGI

- **EELA-2 triggered in 2009 the creation of the Colombian JRU and NGI initiatives**
- **2009 The Colombian JRU submitted a project proposal to RENATA/COLCIENCIAS for the creation of a NGI with the participation of 12 universities**



The project was approved and started in March 2010 with the definition of the architecture of the infrastructure and an operation model

The project will identify those applications that could use the infrastructure and will promote pilot tests to identify skills

- **Potential applications may include, bioinformatics, environmental issues, natural resources**



Developing Grid Initiatives: Argentina, Cuba, Venezuela

- **Recognized by Governmental Science and Technology Authorities (Policy/Decision Makers) (AR, CU)**
- **Consolidating the JRU (AR, VE)**
- **Building NGI/EDGS**
- **Research groups already promoting different initiatives (AR, CU, VE)**
- **Good to robust network infrastructures (AR, VE)**
- **Certification Authorities (AR, VE)**



Argentina, Cuba, Venezuela



- Argentinian e-Science Collaboration Network integrated by 5 universities represented by 9 research institutions and Innova|Red **triggered by EELA** and Pierre Auger Observatory



- Cubaenergia represents the Grid activity of this country they created their own Grid **with the support of EELA-2** and became tutors. There is no JRU



- Venezuelan Grid Consortium represented by 3 universities ULA(JRU) , USB and UCV **triggered by EELA**. ULA has been the pioneer on Grid initiatives in LA



Starting Initiatives: Ecuador, Panama, Peru and Uruguay

- **Recognized by Governmental Science and Technology Authorities (Policy/Decision Makers) (EC, PA, PE)**
- **Research groups starting promoting different initiatives (EC, PA, PE)**
- **Basic Network infrastructures**



Ecuador, Panama, Peru, Uruguay Starting the e-Science efforts



Ecuador

- **EELA-2 triggered the creation of the JRU** integrated by 11 institutions. CEDIA became the JRU coordinator, currently supporting grid, document repository, digital video and video-streaming and satellite image classification over Grid.



Panama

- **EELA-2 triggered the Creation of the Iniciativa Grid Panameña (IGPA)** integrated by ANAM, UTP and CYDETIS, these three institutions will jointly coordinate the PA-GRID.



Peru

- SENAMHI is the JRU coordinator, UPCH, PUCP, USMP and CIP integrate the Peruvian Grid Consortium (PGC) **triggered by EELA-2**. RAAP struggling to increase bandwidth capacity in its network.



Uruguay

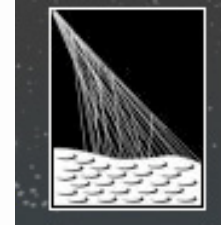
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- RAU together with EELA-2 have promoted the use of grid e-Infrastructures. UY has not created a JRU yet.

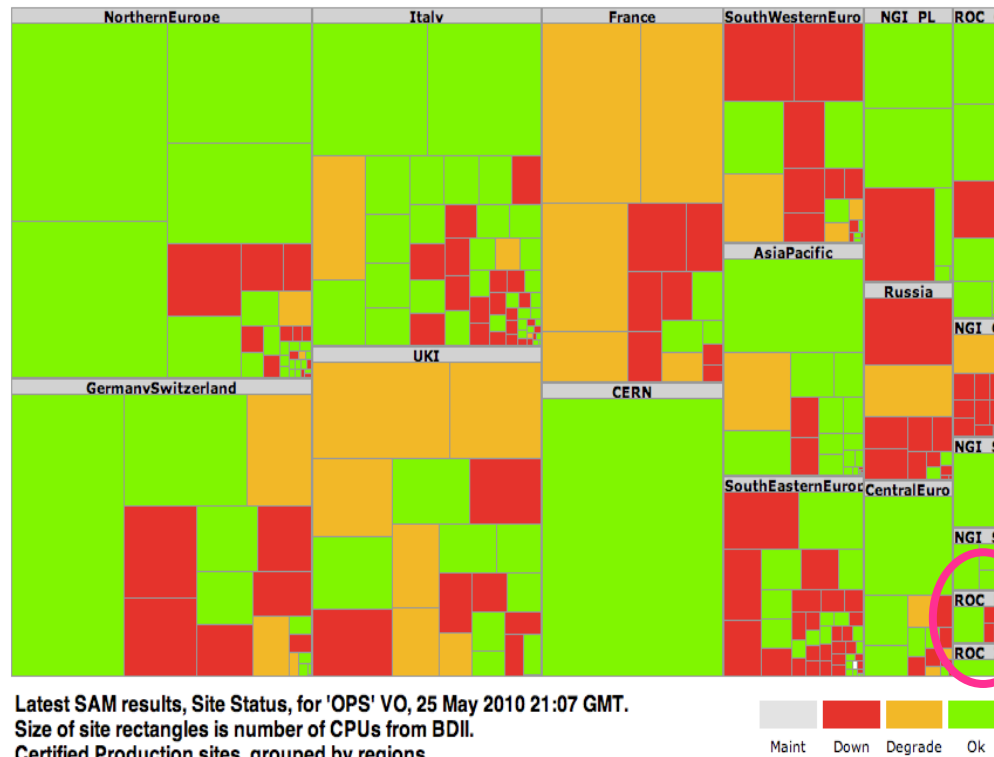


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Several Grid Initiatives & existing Mature Virtual Research Communities



GridMap – Visualizing the "State" of the Grid



Grid initiatives:

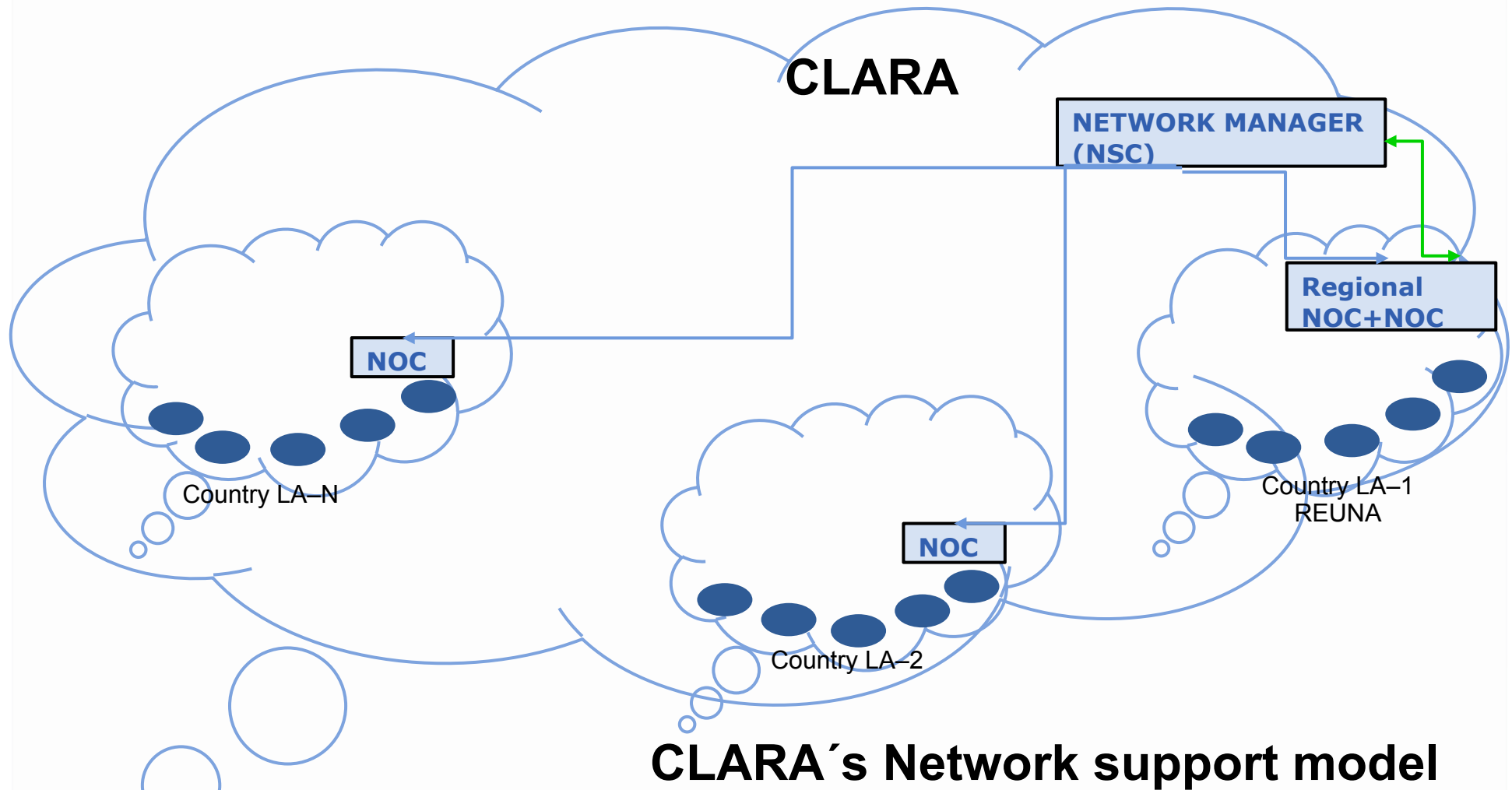
- EELA and EELA-2
- PRAGMA
- LAGrid
- RINGrid



ROC-LA
 ROC-IGALC

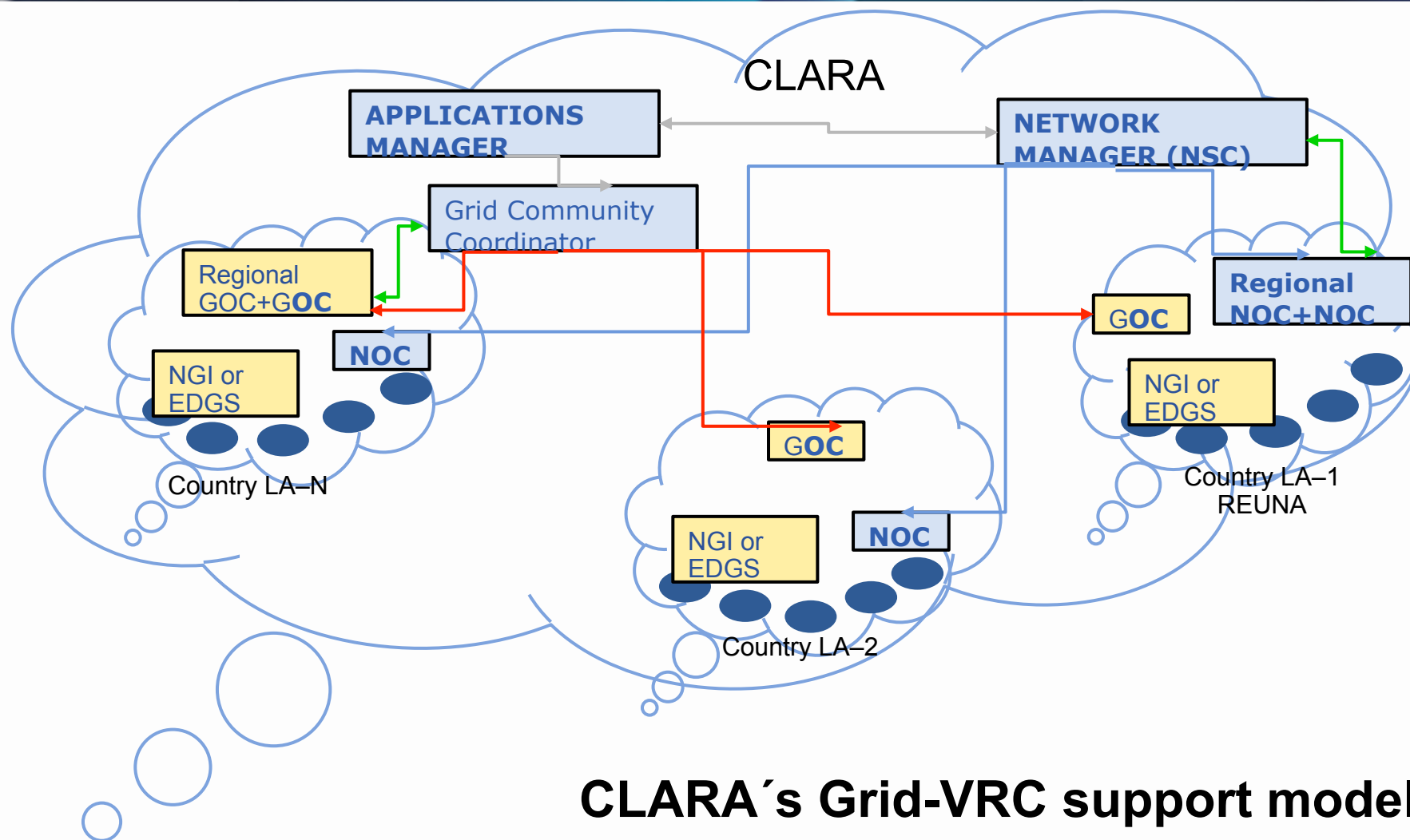


CLARA's Network support Model



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CLARA's Grid-VRC Model

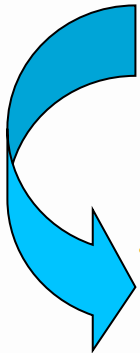


CLARA's Grid-VRC support model



CLARA's Resources Governance Model

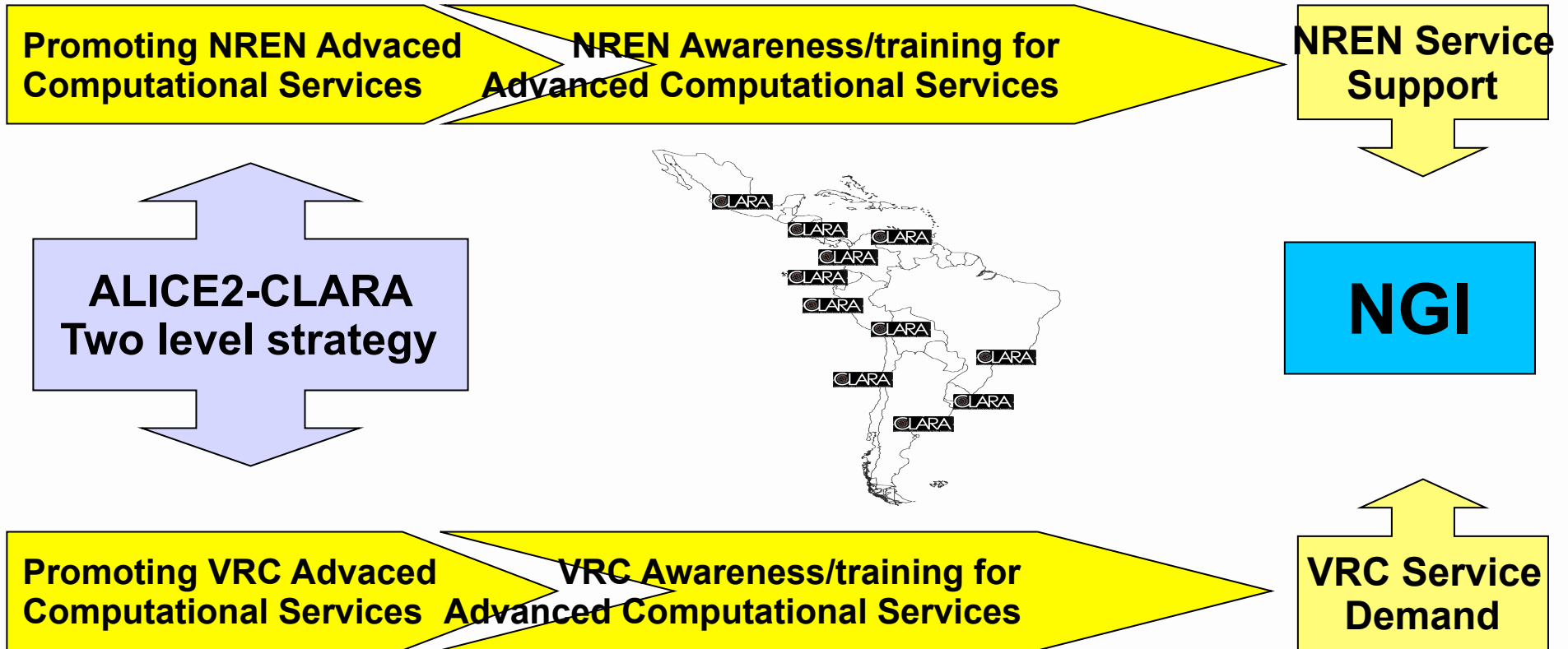
- A first estimation of the manpower effort to operate and support the LA part of e-Infrastructure has been provided, as a function of time: *“The EELA-2 Model for Long-Term Sustainability of Grid Infrastructures in Latin America: Time profiles for the Staffing of The Latin American Grid Initiative (LGI)”* available at <http://documents.eu-eela.org/record/1307/files/>.
- The implementation of the model and its evolution have been anticipated, considering its adaptation to ALICE2 / CLARA future governance:
 - CLARA's *“Life Cycle Product Management and User Communities: an initial vision for the support of Grid Services within CLARA”* (available upon request to Florencio.Utreras@redclara.net);
 - CLARA's *“Plan de Servicios v1.8”*
 - *“GISELA: Portfolio of Services and Competences”* CLARA's





CLARA-ALICE2: Strategy

CLARA to NREN service/support for Advanced Computing needs



CLARA to VRC service/support for Advanced Computing needs

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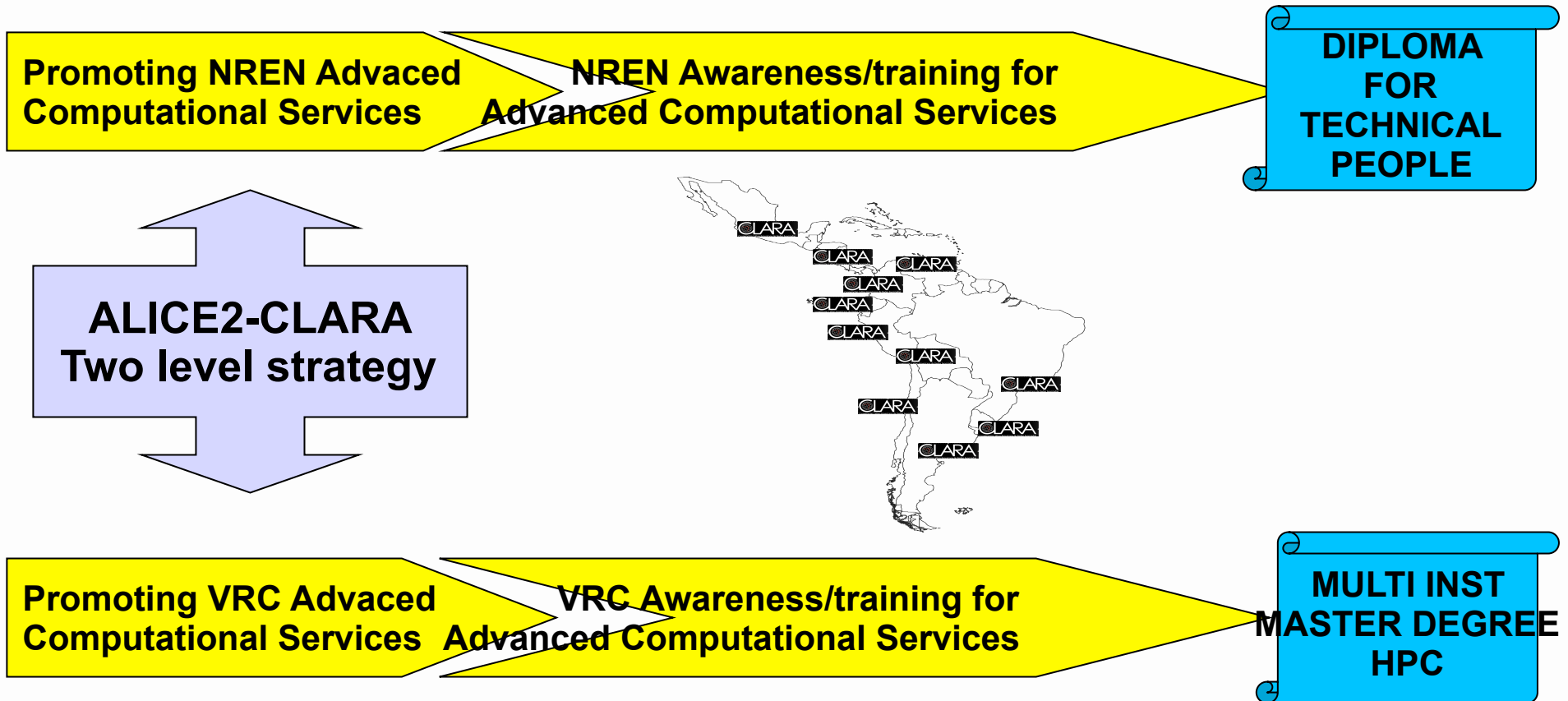


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CLARA-ALICE2: Strategy

CLARA to NREN service/support for Advanced Computing needs



CLARA to VRC service/support for Advanced Computing needs



Productividad científica por país 2000 - 2008
según el SCI (WEB of Science)

Searching for
cooperation
areas

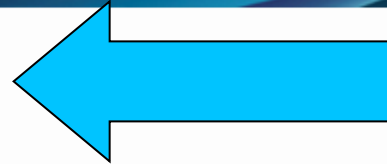
LA
Publications
on ISI
Journals
2000-2008



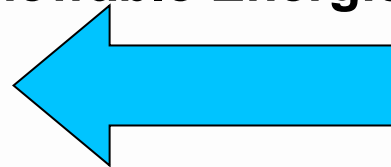


CLARA Identified Areas for possible Virtual Research Communities

Health
Materials Technologies
ICT (e-Government)
ICT (Grids)
ICT (Digital Libraries)
Energy Technologies (Renewable Energies)
Food
Water
Social Sciences
Biotechnologies
Astronomy
Education
Natural Disasters
Cultural heritage (Archaeology and Immaterial Patrimony)



Thematic Areas of scientific papers published by Latin-American researchers during 2000-2008



Direct inquiry to the NREN of CLARA member countries



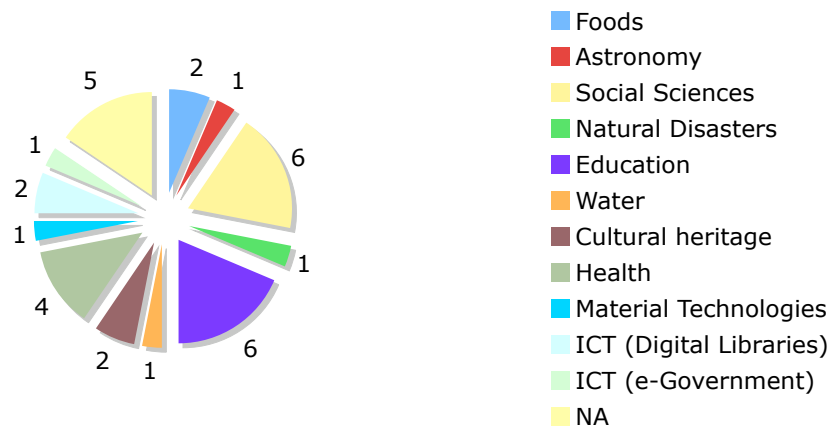
Comparative analysis taken from 51 thematic networks established by the Ibero American Program on S&T for Development, CYTED,



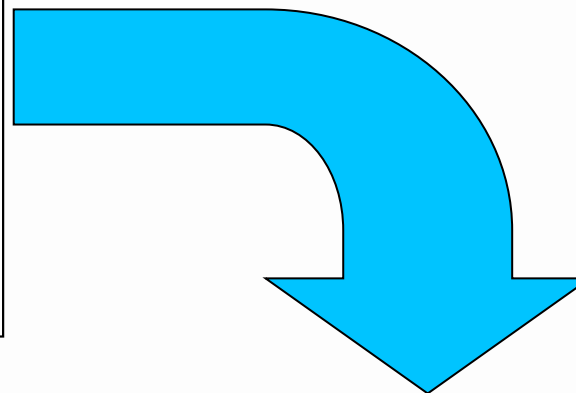
Promoting VRC Advanced Computational Services

VRC Awareness/training for Advanced Computational Services

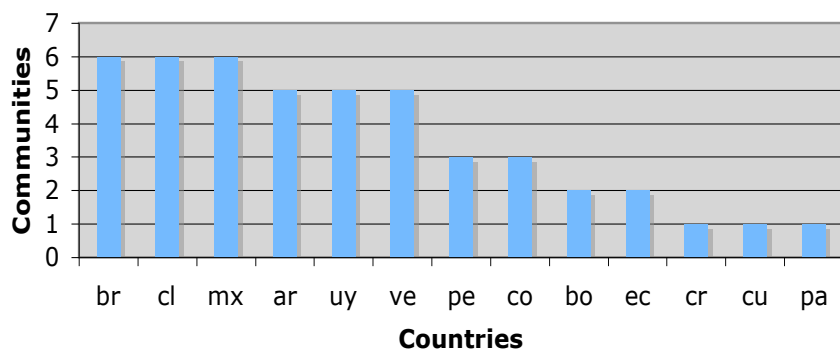
ComCLARA Thematic Areas Research Communities



32 Proposals and 8 Approved Communities Mainly from Humanities



Communities by countries



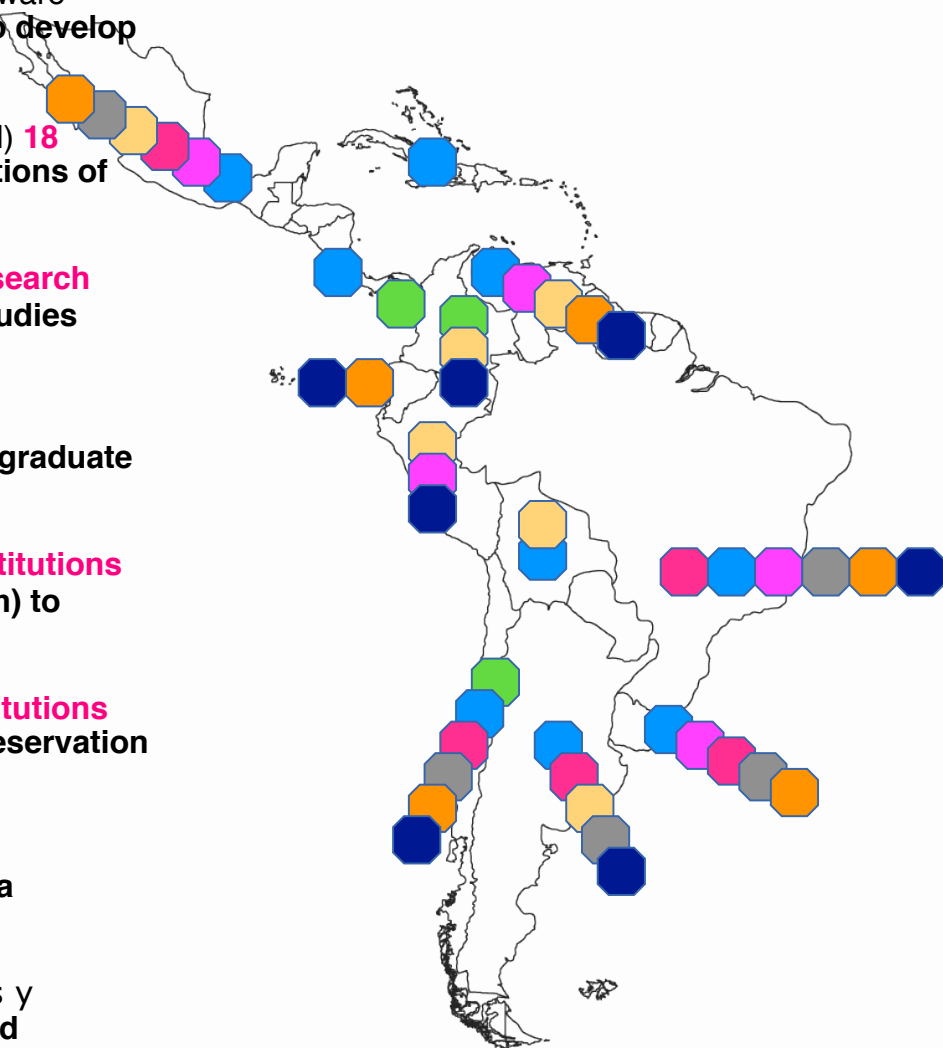
ComClara Funded Communities





CLARA Virtual Research Communities

-  **LACXSER** (LATinoamerican Colaboratory of eXperimental Software Engineering Research) **6 universities**. interested to teach to develop software through a collaborative cooperation
-  **ReLANS** (Red Latinoamericana de Nanotecnología y Sociedad) **18 research institutions** interested to study the social implications of the emerging of nanotechnology in latinamerica
-  **MAYA** (Red de Microorganismos, Agricultura y Alimentos) **5 research institutions** interested to build an international graduate studies (Diploma + Master)
-  **MCISur** (Manejo Costero Integrado del Cono Sur) **7 research institutions** interested to build an international program in graduate studies (Diploma + Master)
-  **LAGO** (Large Aperture Gamma Ray Burst Observatory) **15 institutions** building an infrastructure (detectors+collaborative platform) to detect Gamma Ray Burst at high altitude
-  **MAPA D2** (Mapa e Programa de artes em danza digital) **7 institutions** interested to develop a digital map of collaboration and preservation of artistic dance heritage
-  **LACLO** (Latin American Community of Learning Objects) **7 institutions** building and sharing learning objects through a repository network
-  **CoLaBoRa** (Comunidad Latinoamericana de Bibliotecas y Repositorios Digitales) **7 institutions** sharing contents and experiences building a network of repositories and digital libraries



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CLARA's work to support Grid and E-Science Virtual Research Communities

Ensures the sustainability of the Grid & VRC facilities in Latin America by:

- Raising awareness of policy/decision makers
- Collaborating with RedCLARA and NRENs
- Promoting e-Science Initiatives and/or Regional/National Grid Initiatives/Equivalent Domestic Grid Structures
- Enhancing the Regional Network Operation Centre
- Attracting new applications to support the e-Infrastructure
- Supporting the consolidation of emerging regional Virtual Research Communities



OBRIGADO, THANKS

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