



# Red Universitaria Nacional

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[www.reuna.cl](http://www.reuna.cl)

# REUNA is the Research and Education Network of Chile

*Our vision is to be the leader of the national digital infrastructure for expanding the human knowledge frontier on Science, Culture and Education.*

Our values are: equity, quality, decentralization, collaboration and democratization.

# REUNA is the Research and Education (R&E) Network of Chile



- Private nonprofit Organization established on 1990.
- 19 Members; 17 Universities, Conicyt and AURA Consortium
- Non government funding
- Members pay fixed yearly fees
- Serves as e-Infrastructure to Public and Private Universities and R&D Organizations

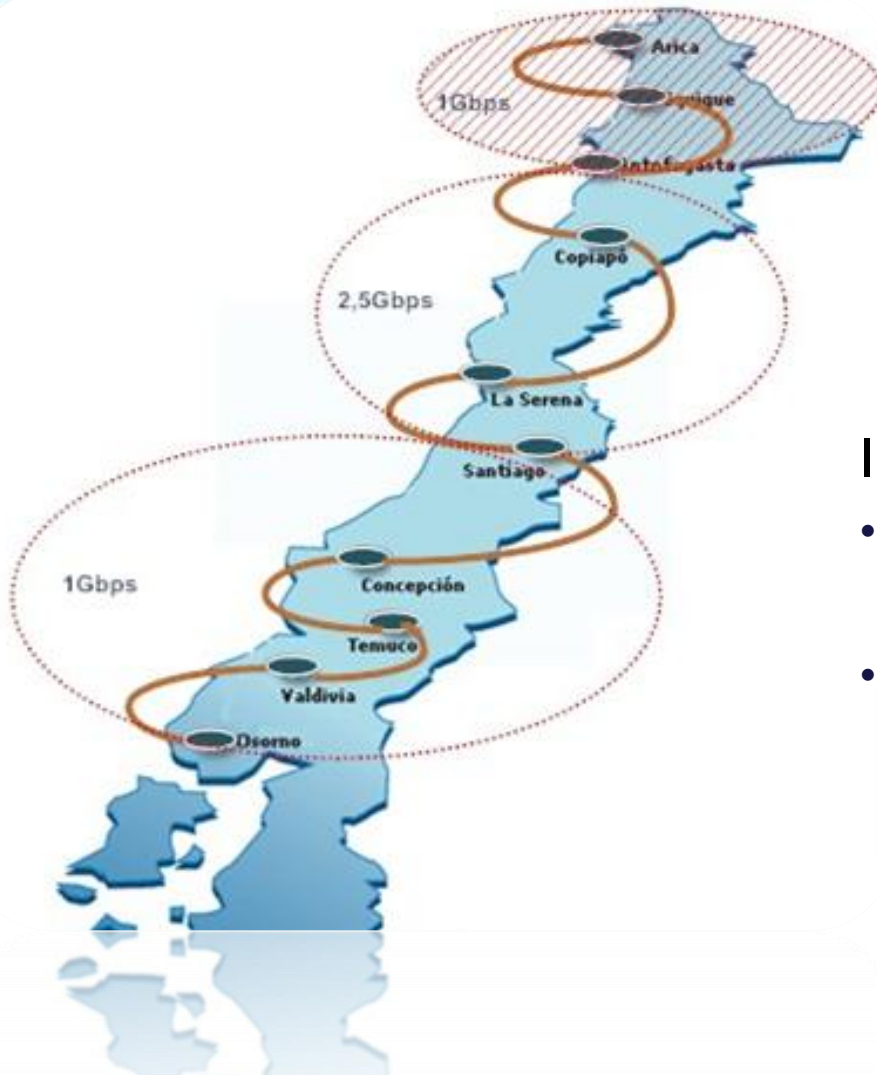
# REUNA has an Optical Network

In the framework of EVALSO project:

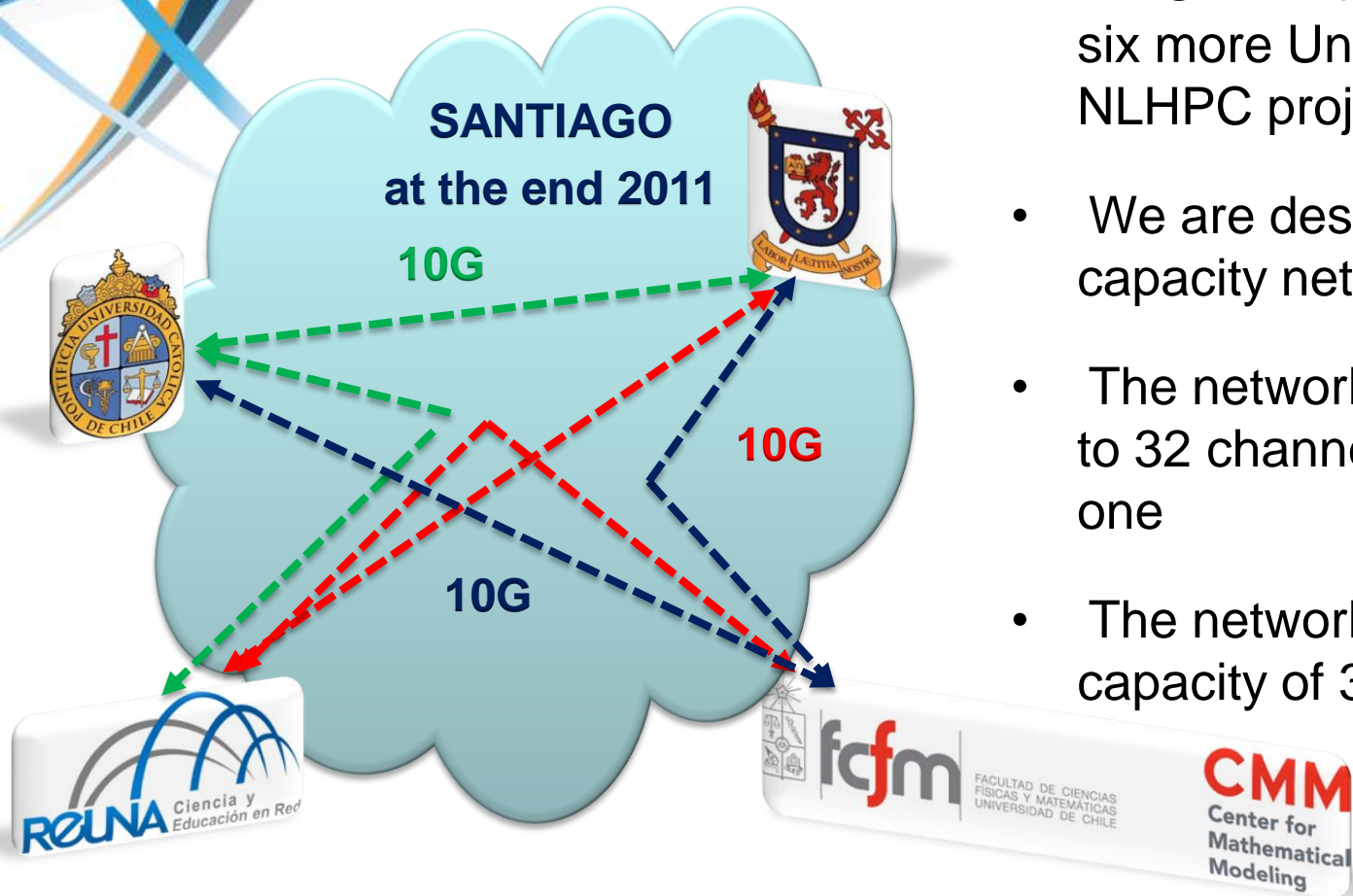
- REUNA took the first step to a photonic network
- Since 2010 REUNA manage photonics links and equipments
- Antofagasta, Copiapó, La Serena and Santiago are connected at 2.5 Gbps

Internal effort:

- Since April 2010 REUNA has 1Gbps connection between Santiago and Osorno
- We are working in the network up-grade between Arica and Antofagasta



# Another important step will be accomplish in the very near future



- REUNA with U. de Chile and six more Universities are part of NLHPC project.
- We are designing a high capacity network in Santiago
- The network will exchange up to 32 channels of 10Gbps each one
- The network will have a capacity of 320 Gigabit/s

# REUNA is the digital bridge to the global collaboration in R&E

- Founder of RedCLARA network, initiative supported by the European Commission and regional networks



- REUNA is connected with the 13 R&E networks in the region and also Europe, Asia, Oceania and North America
- Interconnects researchers and teachers across the borders
- Upgrading R&E Regional Networks is a contribution to the digitalization of Latin America.

# Two decades of high growth and contribution to Chile's digital development

**2010**

Big step towards an optical network and back to the cyber-infrastructure for science and education

**2004**

First country in the region to be connected to the European network, GEANT, through RedCLARA

**2000**

The President of Chile announced the connection to the International R&E Networks, through Internet2

**1997**

Chile set up the most powerful R&E network in Latin America, REUNA2

**1992**

At the beginning of the new year, REUNA connected Chile to Internet with the NSF support

**1990**

REUNA started as a joint university project supported by CONICYT.

# REUNA research application areas



Since 2003, Reuna put together **music and dance between Chile and different countries** in Asia, Europe and North America.



In 2005, **a rock hammers in Codelco** was operated from Tokyo by connecting the Chilean and Japan via GEMnet2



In 2008, **Simulating a telescope almost 11,000 kilometers in diameter**: first real-time e-VLBI observation with telescopes in Africa, Europe, North America and South America (Chile) (EXPReS project)

# REUNA research application areas



**English/Spanish workshops between universities in the USA and Chile are a reality since 2006**



**First national initiative to join research laboratories between Brazil and Chile through remote instrumentation** (Human spermicide obtained from *Latrodectus mactans* project (2007-2010))



With the **National Laboratory of HPC** project, at the end of 2011, Chile will have a great computing and modeling capacity that will be accessed through the REUNA network

# The Astronomical Centers trust in REUNA's abilities



- **2005:** AURA (Association of Universities for Research in Astronomy) joined REUNA. Today we are working on to face the high demands of LSST.
- **December 2010:** an strategic alliance was signed with ESO in order to develop the high speed network between Paranal and Santiago.
- **March 2010:** NAOJ, the Japanese partner of ALMA project, joined to REUNA and started with the data transfer tests.
- We are contributing to put up our country as an Astronomical Power



# FUNET is an advanced research networks owned by the Government

- CSC maintains and develops the Finnish research and education fiber-optic network **Funet**, an extremely reliable high-capacity network.



*CSC's mission is to improve the possibilities for research, teaching and product development conducted in Finnish higher education institutions, research institutes, and industry.*

- CSC is a wholly government owned company operating on a non-profit principle.
- Started in 1987, originally a joint university project.
- Funet links higher education institutions and research institutes providing them with national and international network connections.
- Connects about 80 research organizations and 350 000 users to the global research networking infrastructure.

<http://www.csc.fi>

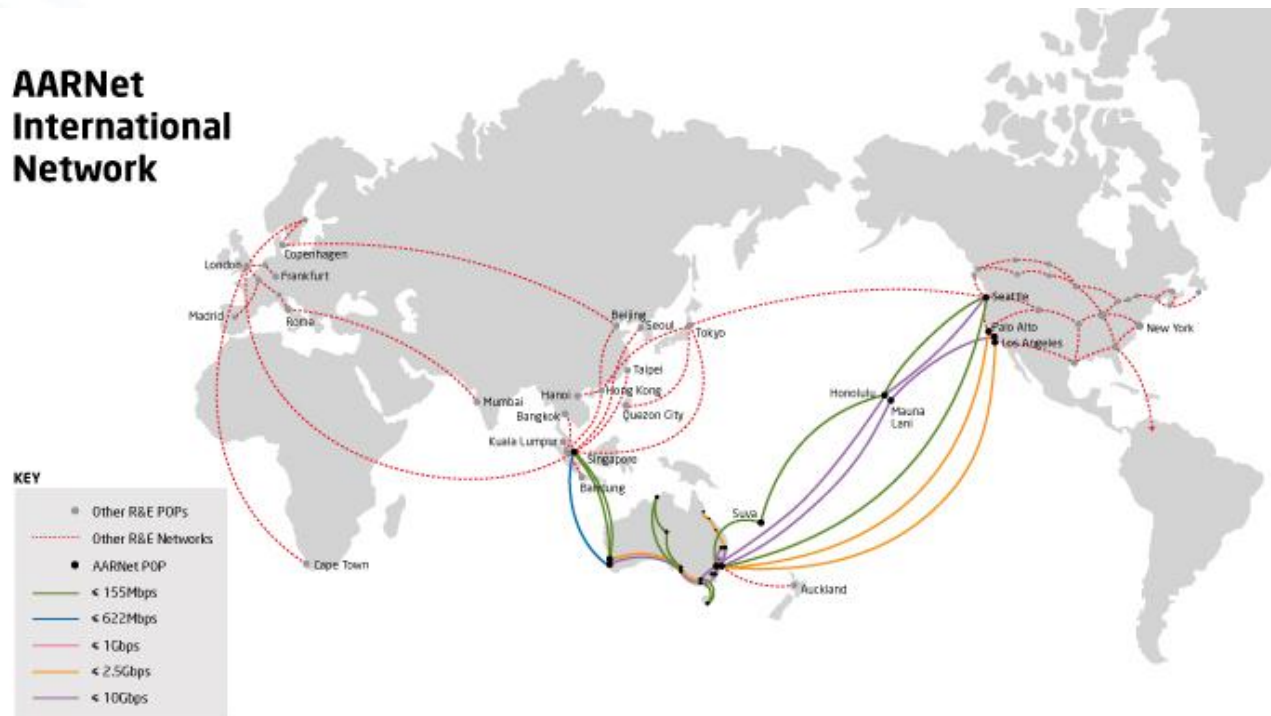
# The Australia's R&E network (AARNET) has developed with the government support

- **The Higher Education Bandwidth Advisory Committee** was established by the Minister for Education, Science and Training in August 2002 to advise him of the short to medium term bandwidth requirements of the higher education sector with a particular focus on research needs.
- **The Committee recommends the establishment of the Australian Research and Education Network (AREN)** as a collaborative venture between the Commonwealth, State and Territory Governments and the higher education sector, and collaboratively funded by those stakeholders.
- The Australian Research and Education Network (AREN), **funded by the Australian Government to the value of \$88 million from 2003 to 2006** through the Systemic Infrastructure Initiative
- Source: **National Collaborative Research Infrastructure Strategy (NCRIS)**. Through NCRIS, the Government is providing \$542 million over 2005-2011 to provide researchers with major research facilities, supporting infrastructure and networks necessary for world-class research.

# AARNET is one of the most advanced research networks in the world

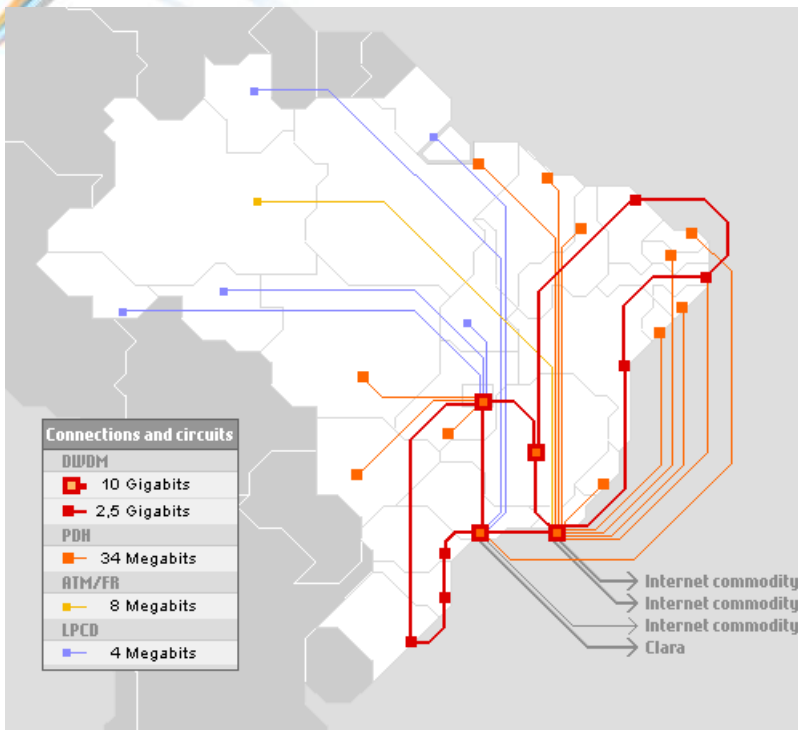
- AARNET is one of the most advanced international optic fibre research and education networks in the world.
- The network connects universities and research institutes in all capital cities and many regional centers, as well as isolated research facilities such as radio telescopes.

## AARNet International Network



# RNP, the largest academic network in Latin America

- The National Education and Research Network (RNP), was created in 1989 by the Science and Technology Ministry.
- The Federal Government maintains the RNP, which is managed by a private company (AsRNP), a non-profit civil society.



- RNP links close to 600 educational and research institutions in the country, benefitting more than one million users.
- Since 2000, RNP has promoted the use of advanced applications on computer networks and is linked to other academic networks all over the world
- RNP is part of the National Program of Bandwidth of Brazil, **BrasilConectado**

<http://www.rnp.br>

# Final Remarks

- REUNA connected Chile to the Internet and has been a driving force in the country's digital development.
- REUNA encouraged the Latin-American network (RedCLARA) creation.
- REUNA is one of the most advanced research networks in the region
- REUNA is contributing to place the country as an Astronomical power.

21 years contributing to move Chile into a Digital Society

Thanks for your attention.!!!!



**REUNA** Ciencia y  
Educación en Red