



REUNA – SA3CC

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Agenda

- About REUNA
- Current infrastructure
- Synergies with astronomical community
- Future projects

REUNA

Ciencia y Educación en Red

*30 years contributing to
the digital development
of the chilean R&E
ecosystem*



45 Organizations in Chile are part of REUNA and we want to integrate the entire I + E ecosystem

+ 9.000 Km Network
Infraestructure

+80% Research in Chile is carried
out by REUNA institutions

+400.000 Nationally connected students
and academics

REUNA
Ciencia y Educación en Red

Current infrastructure



+9.00Km
Network infrastructure

100%
Backuped Backbone
Network Infrastructure

NOC
24x7 in house

18
Points of presence
located in the main cities

What's new from last
SA3CC?

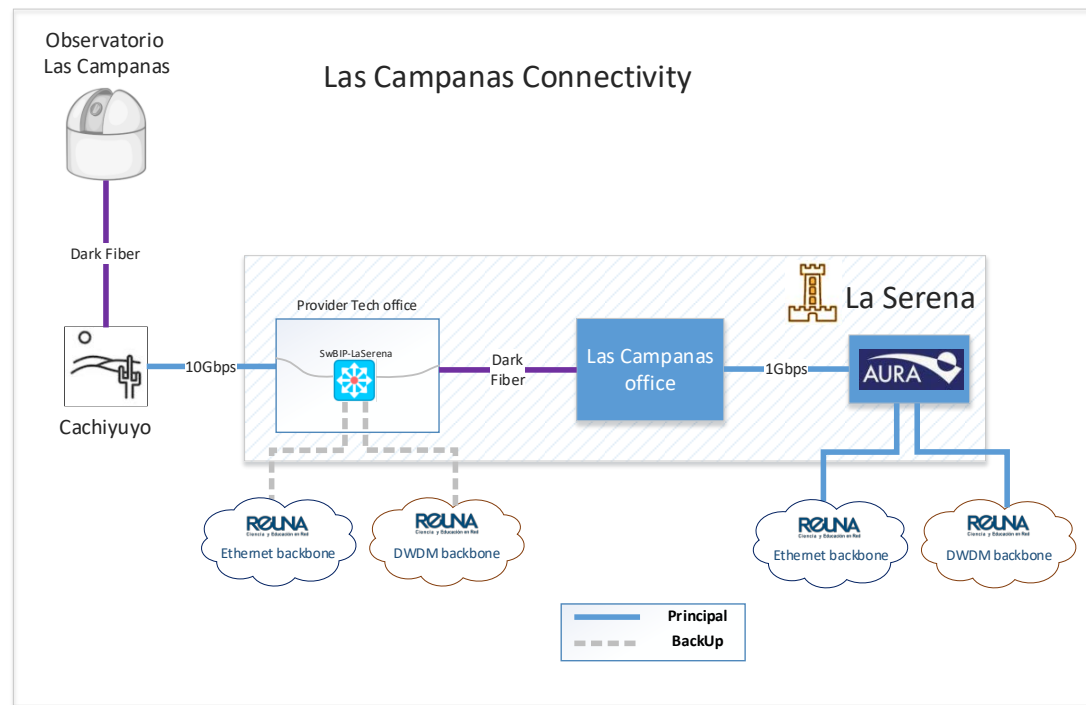
Improving Las Campanas connectivity

Goal

- To be able to use in synergies the infrastructure already in place to increase the connectivity availability and expand the possibilities to other initiatives

Status

- Implemented during 2021

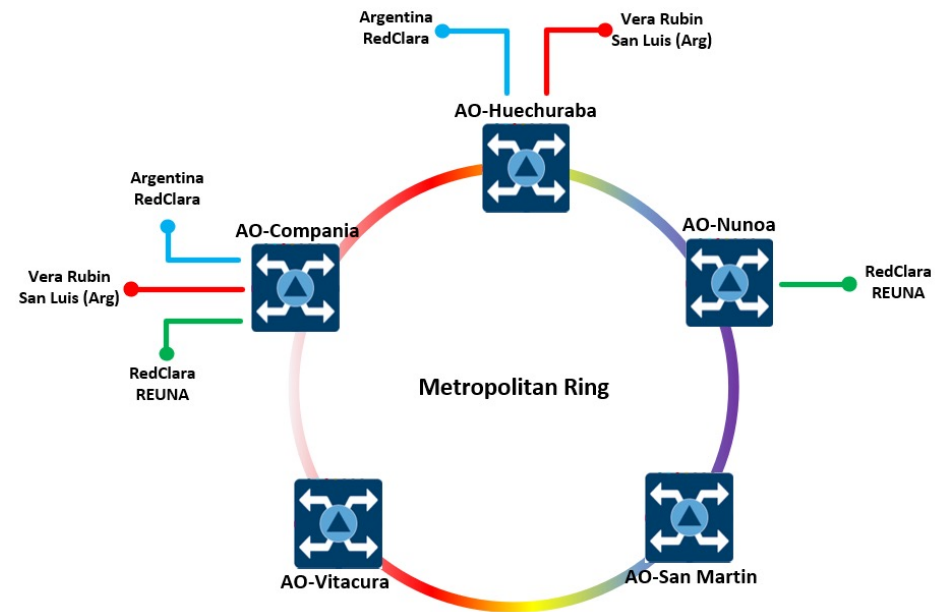


Increasing Capacity in Metropolitan Ring

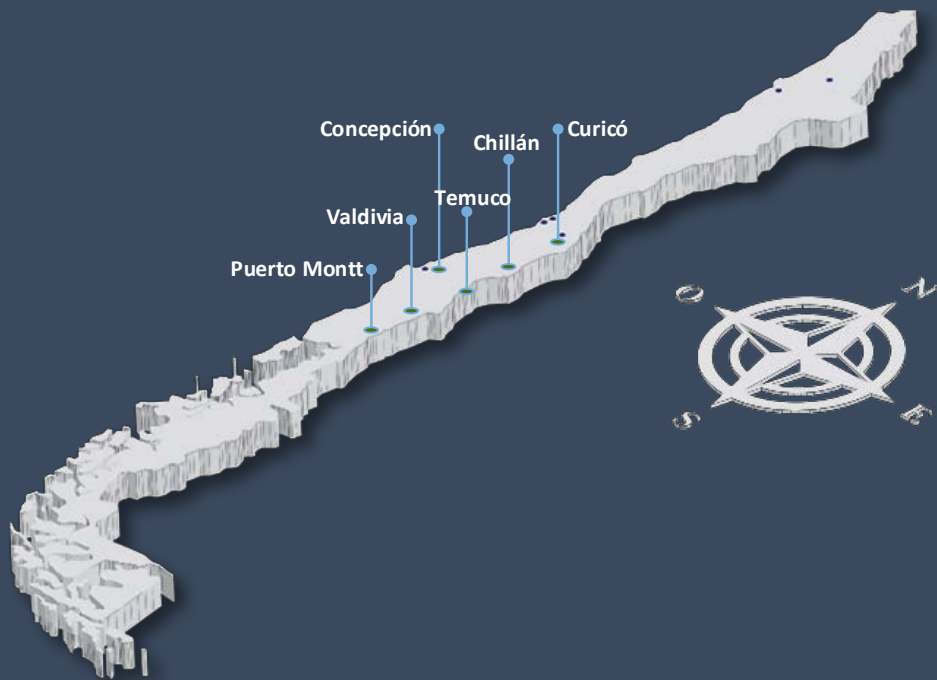
RedCLARA DWDM equipments were implemented in Huechuraba, Compañía and REUNA using lambda alien over Metropolitan Ring

New services in service:

- 100Gbps traffic for Vera Rubin from Argentina.
- 200Gbps traffic for RedClara from Argentina.
- 200Gbps traffic between REUNA and RedClara.



A reliable and scalable southern backbone network



Santiago - Concepción

- Direct Link 10G Santiago - Concepción

Curicó

- New Ethernet Node

Chillán – Concepción - Temuco

- 10G Protected (1+R)

Temuco – Valdivia – Osorno - PMontt

- Upgrade from 1G to 10G Protected (1+R)

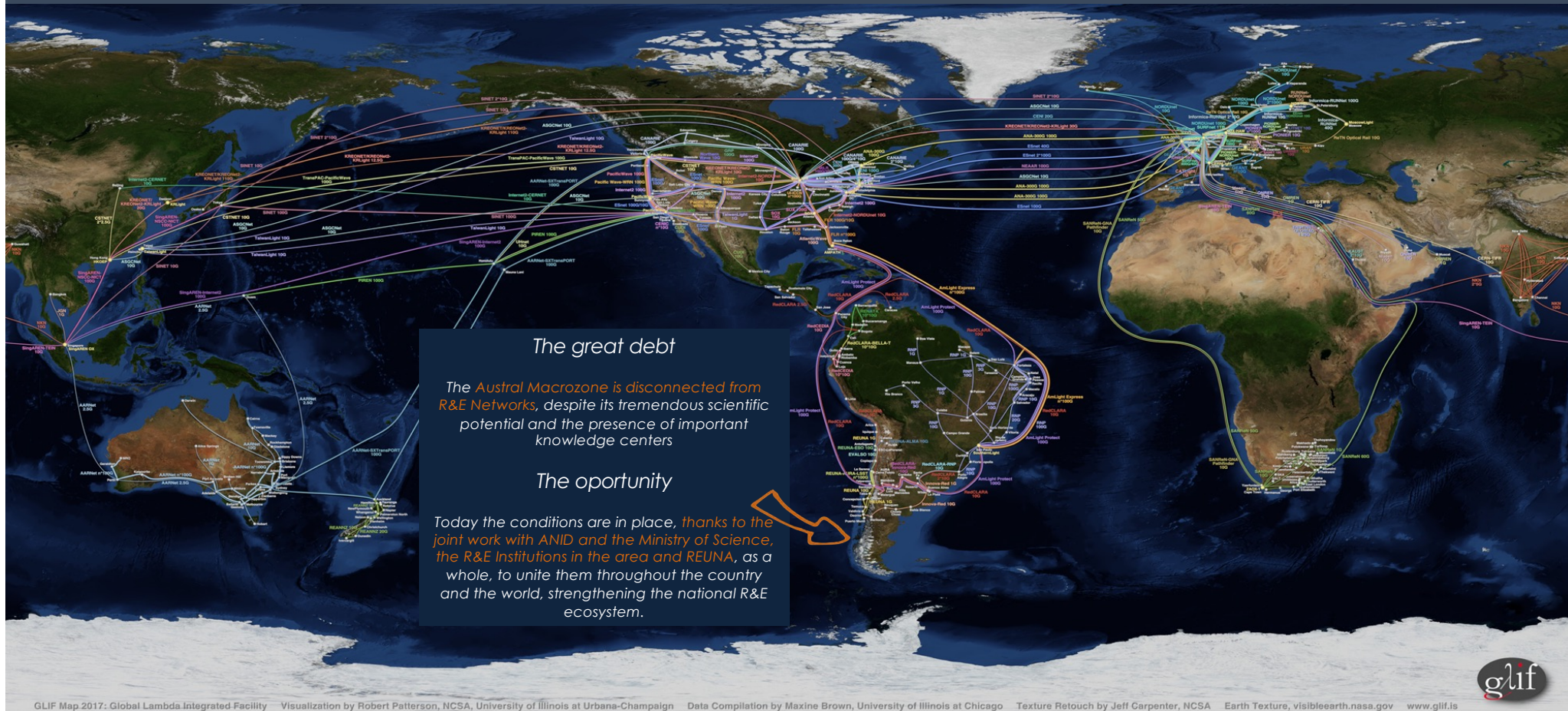
Backup link

- Argentina backup link upgraded

Projects under construction

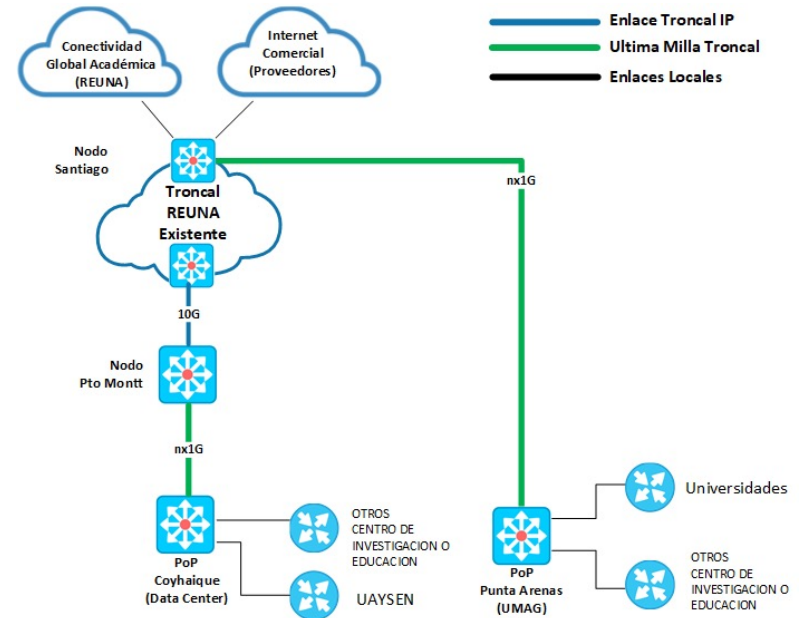
Research and Education Networks are Enabling Infrastructures for Science, supporting scientific discovery, fostering global collaborations and closing gaps in access

<https://www.inthefieldstories.net/>



agonia Project is being build

- Connectivity to Coyhaique and Punta Arenas
- Based on service providers that reach the areas
- Initial operation time frame: 2022 - 2027



Current Status:

- Link to Coyhaique under construction
- Link to Punta Arenas to be implemented during second semester 2022

Building Chajnantor R+E PoP

- Goal: To be able to provide connectivity to the observatories or projects located in Chajnantor Valley
- Current Status: Agreement between ALMA and REUNA in final stage
- Initial capacity: 1 Gbps scalable over time
- intended implementation date: end 2022



Credits: Juan Carlos Rojas
(ESO/NAOJ/NRAO)

A collaborative physical connectivity



Cerro Chajnantor

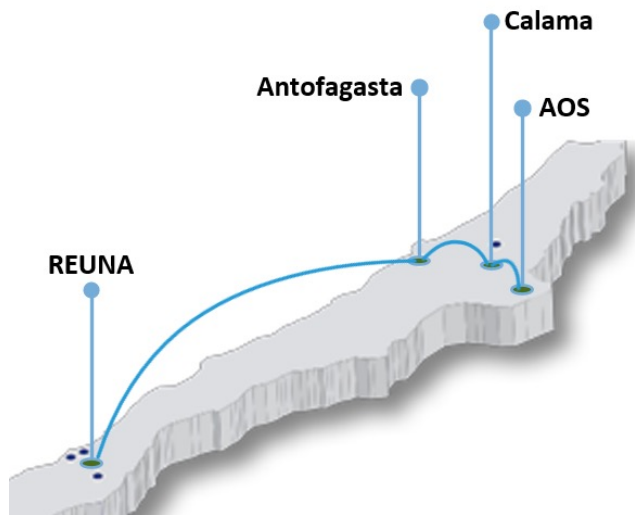
- TAO
- CCAT



Cerro Toco

- Simons Observatory
- CMBS-4
- PolarBear
- ACT
- CLASS
- SMB-54

Simulating a PoP at AOS CCAT Test

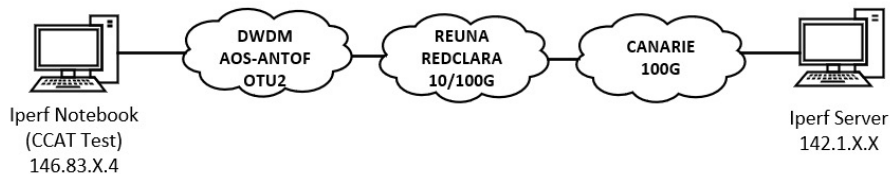


Network infrastructure

- ALMA:
 - AOS – Calama – Antofagasta: 1 Gbps
- REUNA
 - Antofagasta-Santiago: 100Gbps

Protocol	Route (from AOS)	Download Avg.	Upload Avg.
TCP	CCAT (AOS) - University of Toronto	917 Mbps	933 Mbps
UDP	CCAT (AOS) - University of Toronto	* 749 Mbps	951 Mbps

* Problems with protocol UDP on Iperf notebook AOS



REUNA is partner with the international connectivity projects



RedCLARA

- International academic provider
- Public clouds connectivity (Google, AWS, MS)



BELLA

- Direct route for exchange traffic with Europe
- More bandwidth, lower latency times



AmLight

- REUNA is partner for AmLight in Chile to provide international connectivity

Future international synergie projects

Cable Humboldt



14,810 km
Fiber Optic System

USD 395 mill
CAPEX

Consortium
Public-Private

25 year
Operation



Punta Arenas is the gateway for the Antarctic Programs of more than 20 countries

We are working to make the Chilean southern zone a world science pole



Autoridades nacionales inauguran primer sensor de la Red Latitudinal de Estaciones Multiparamétricas de Antártica

Compartir: 06 Diciembre 2021



Avanza proyecto de construcción del Centro Antártico Internacional de Punta Arenas

Publicado: Miércoles, 4 de Agosto de 2021 a las 17:17hrs. Autor: Cooperativa.cl

- Se otorgó la recomendación satisfactoria a la etapa de ejecución.
- El edificio de más de 32 mil metros cuadrados se emplazará en el borde costero.



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