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# LSST/AURA - REUNA
# Long haul network
# Chile National WAN

Sandra Jaque, REUNA

# **33** research and education institutions a REUNA

**19** Univerities

**5** Astronomical Centres

**8** Research , education and culture centres

**CONICYT:** Comisión Nacional de Investigación Científica y T

## Recent institutions in REUNA

Universidad de Valparaíso CHILE

Jun-2015

MNHN dibam DIRECCIÓN DE BIBLIOTECAS, ARCHIVOS Y MUSEOS

Oct-2015

cnid Consejo Nacional de Innovación para el Desarrollo

Mar-2016

SAACC, REUNA report Apr2016

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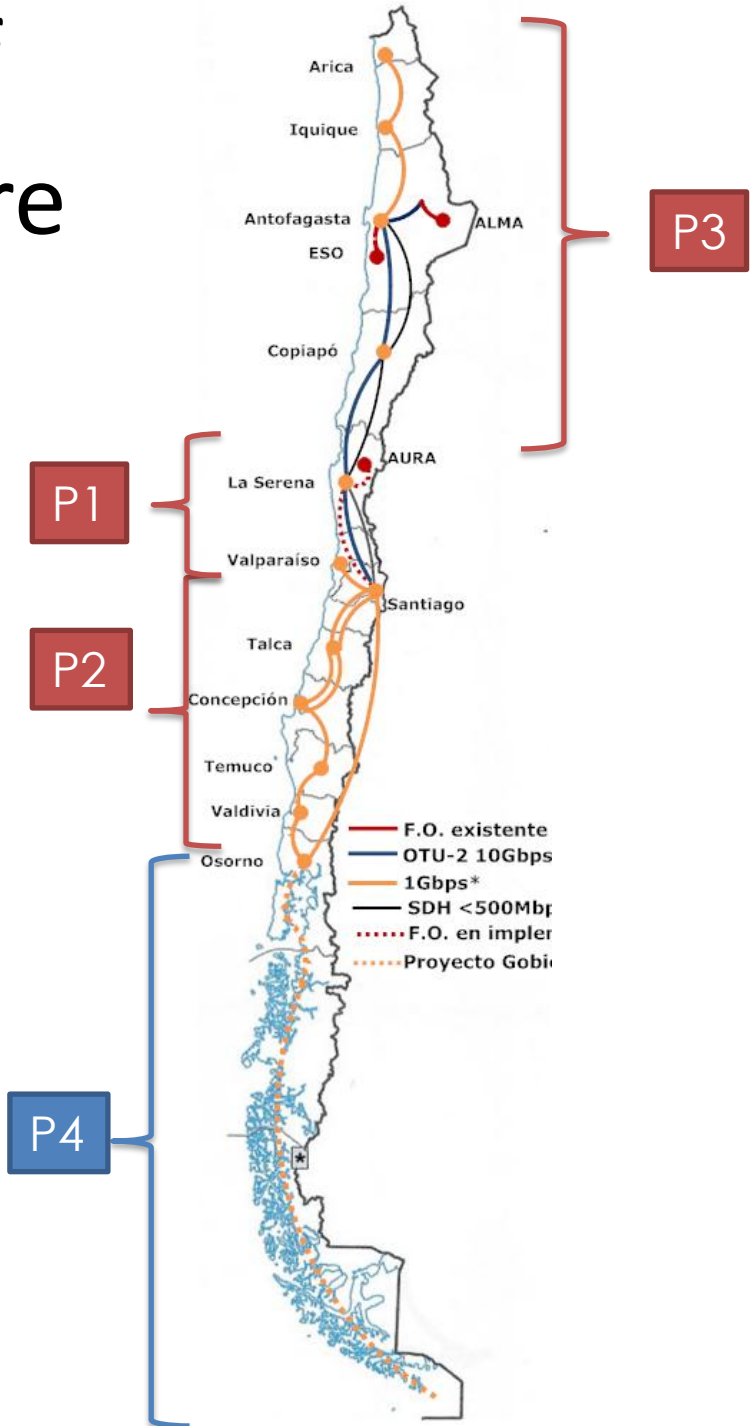
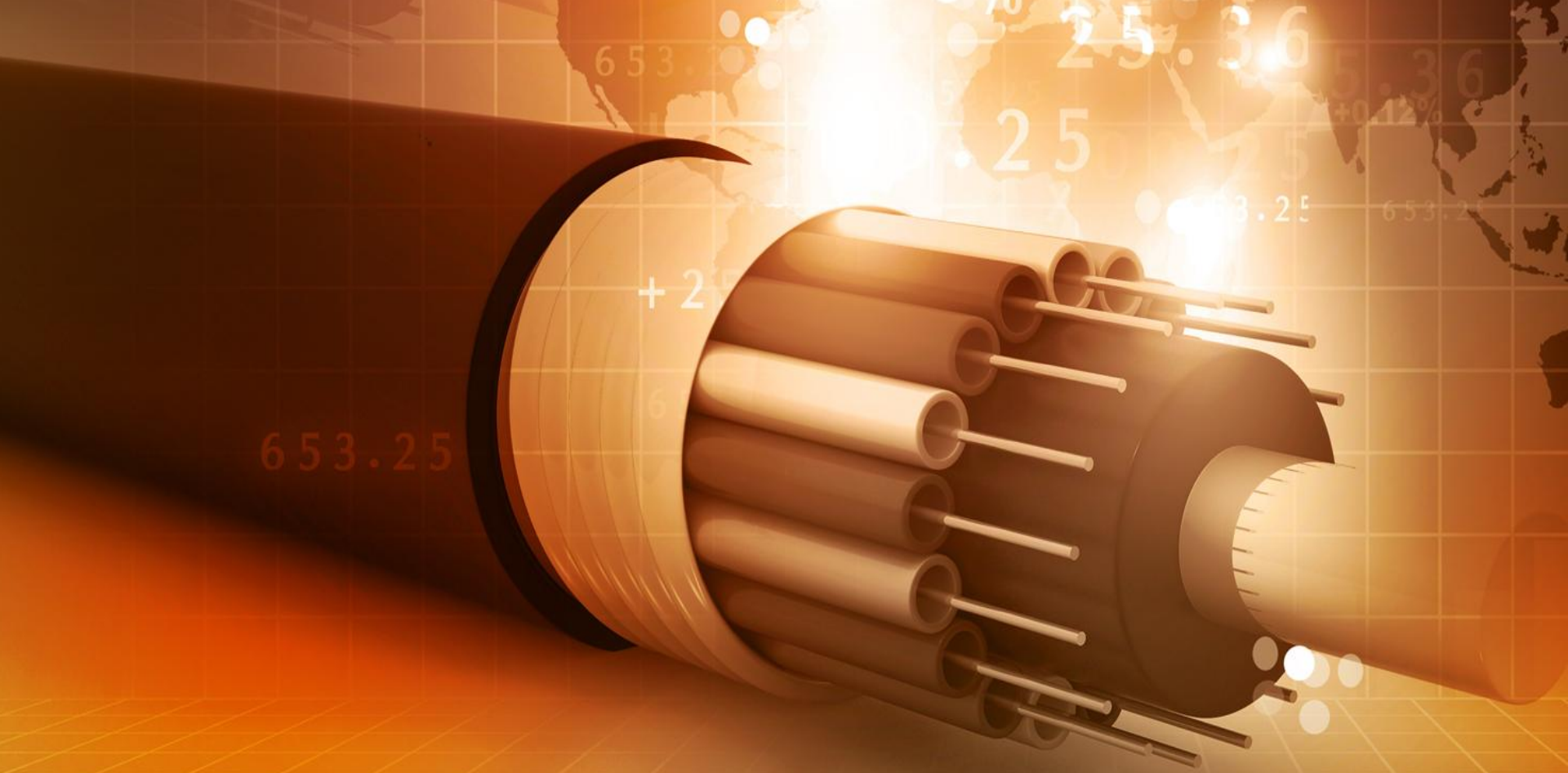
# REUNA's Backbone (Apr2016)

# Projects portfolio of Network infrastructure




SAACC, REUNA report Apr2016



# La Serena - Santiago

P1

# 1st long haul path over dedicated fibre

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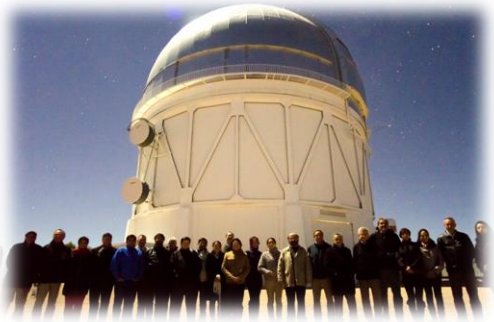

AURA

LSST
Large Synoptic Survey Telescope

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# Long haul network, Chile National WAN

| Project | Executor |
|---|---|
| • Long haul La Serena – Santiago<br>• Link La Serena – AURA Gatehouse<br>• La Serena - Santiago Backup link (4Gbps) | REUNA |
| • DWDM equipment | REUNA & AURA |
| • Operation of the long haul infrastructure | REUNA |

| Mountain - Base Link | AURA |
|---|---|

# La Serena – Santiago (primary link)

- 1 pair of fibre over 700Kms (new cable LD3T)
- Over poles along public road (road to the east)

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# La Serena – Santiago (primary link)

- Type of fiber G.652
- 6 intermediate nodes along the path, with housing to host smaller nodes (amplifiers)
- Two types of fibers: Backbone and local loops to the intermediate nodes.

**Status**

- Backbone fiber finished
- Local loop under construction

**Future steps**

- Final measures of the total fiber (telco provider)
- Reception plan (REUNA)

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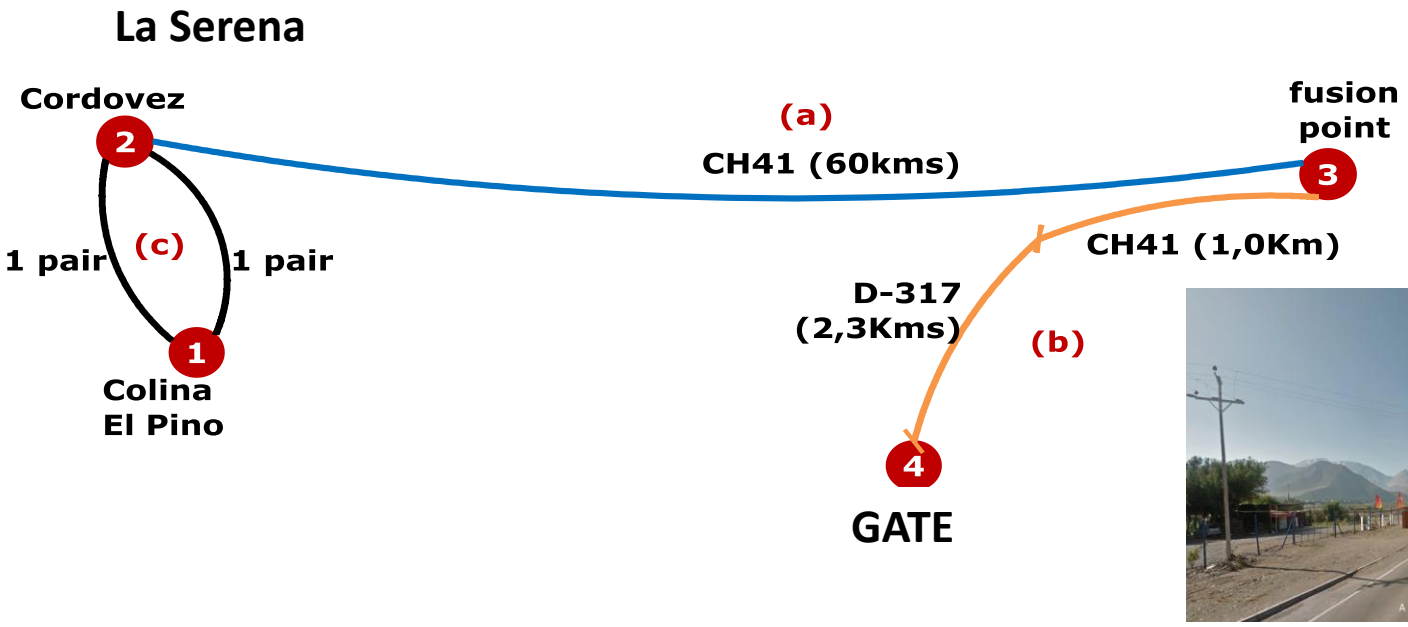
# La Serena – AURA Gate



| Path | Status |
|---|---|
| Long haul La Serena to CH41 (road to Vicuña) | Ready |
| Local loop from CH41 to GATE | Pending |
| Local loop in La Serena city | Pending |

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# La Serena – Santiago (secondary link)

- Short term: 10Gbps link
- Long term: at least 40Gbps link

**Status of 10Gbps**

- Transport ready
- Setup will be done during April in coordination with AURA

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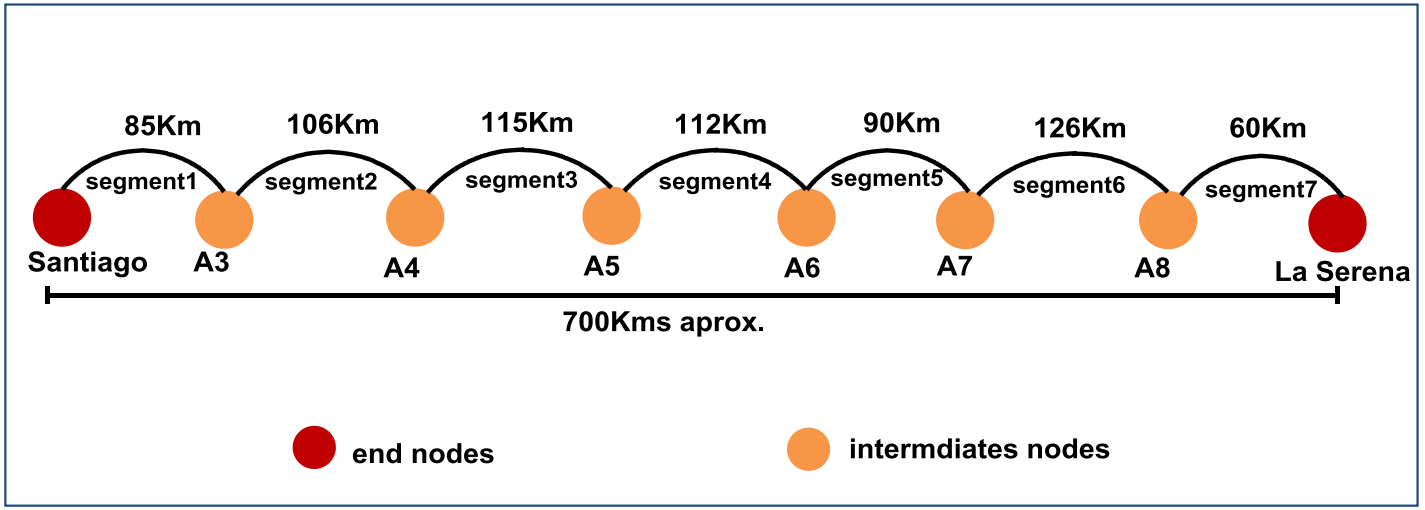
# DWDM equipment




| Path | lambdas |
|---|---|
| La Serena - Santiago | 2xOTU-4 (100Gbps) |
| La Serena-Observatory | 3xOTU-4 (100Gbps) |



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# DWDM equipment

**Status of the tender process**

- Started: 07-Sep-2015
- Negotiated procedure, 4th rounds up to now
- 8 equipment providers submitted proposals

**Next steps:**

- Move forward with field test and compatibility test (camera)

# Project schedule

**1st semester 2016**

- Fiber La Serena – Santiago
- Fiber La Serena – AURA Gate

**2nd semester 2016**

- Equipment reception
- Deployment

# Santiago – Puerto Montt

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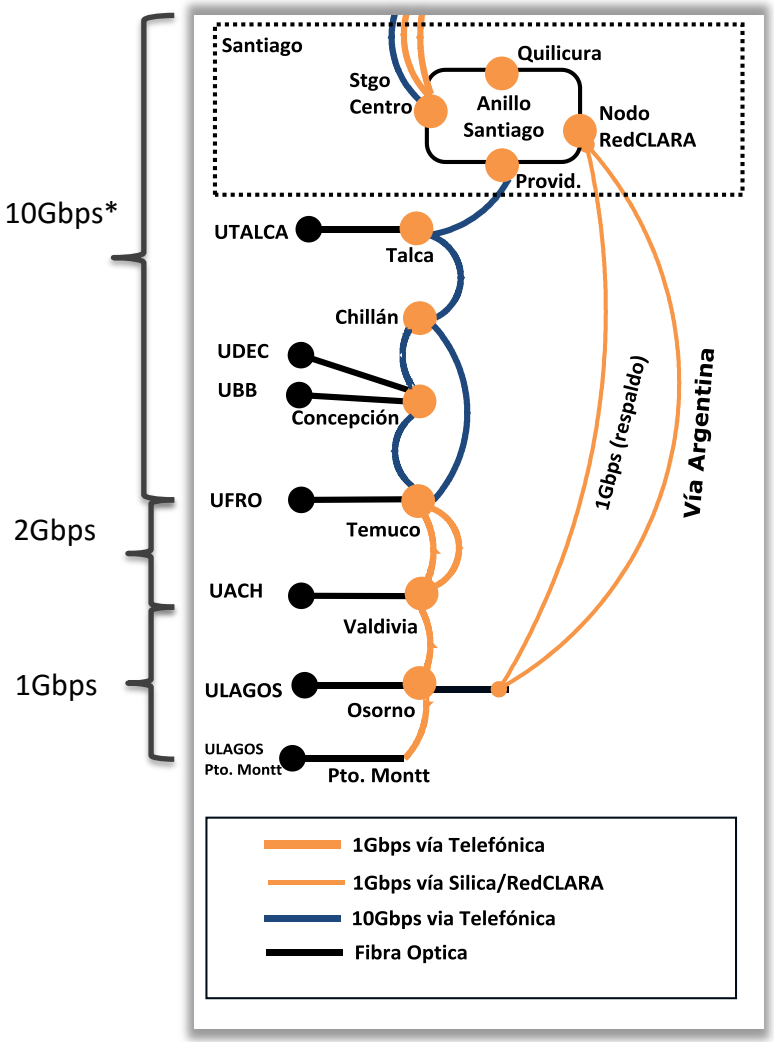
# Backbone: Santiago – Puerto Montt




## Upgrades

- Santiago – Temuco: 10Gbps
- Temuco – Valdivia: 2Gbps
- Osorno – Puerto Montt: 1Gbps (extension)
- 6 IP backbone equipment upgrade

## Schedule

- Equipments already decided (EX920x Juniper)
- Transport network ready: May
- Deployment: June - July



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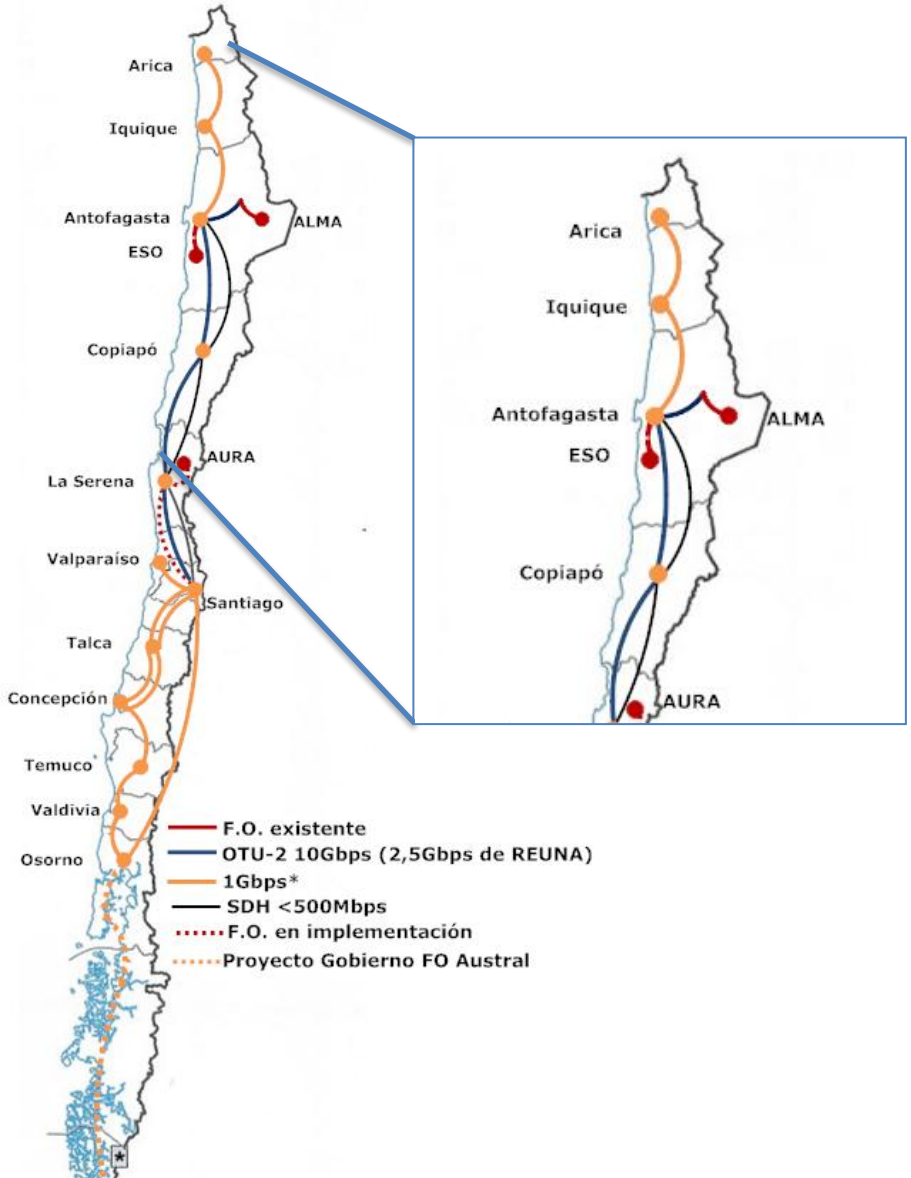
# Backbone: La Serena - Arica




- La Serena-Arica key path in the strategic development of the REUNA`s partners
- Ideal primary and secondary paths
- In synergy with other projects, in particular BELLA project
- Medium term project

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# Chilean Backbone: The dream

**Vision**

- Move to a backbone based on fiber
- Light the fiber with the capacity needed
- Model based mainly in CAPEX instead of rent capacity
- Backup links (ring topology)
- Development in synergy with partners

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