



Framework Programme 7 (2007-2013) Research infrastructures projects



# EVALSO

Enabling Virtual Access to Latin-American Southern Observatories

## Summary

The increasing cost of experimental facilities in many research fields is powering a concentration of such facilities in a few selected places, sometimes driven also by environmental conditions.

The clear, steady skies without light pollution necessary to astronomical observatories are generally not easily found. In the Southern hemisphere the best observing facility for optical and infrared astronomy is widely acknowledged to be ESO.

At the same time the ever increasing data volumes as detectors get bigger and more complex, raises a number of problems for the builders, the operators and the users as well. The remoteness of the facilities makes the travelling from European home institutions difficult and expensive. Information Technologies can offer a solution to these problems, provided the necessary infrastructure and tools are put in place.

## Objectives

The strategic objective of this project is to integrate the world-class facilities created in Chile by the European astronomical community into the expanding global instrumental grid. These represent an investment of many hundred million Euros that will be exploited in the next decades.

The present project proposes to create a physical infrastructure (and the tools to exploit it) to efficiently connect these facilities to Europe. The infrastructure is complementary to the international infrastructures created in the last years with EC support (RedCLARA, ALICE, GEANT) and is another step in the creation in Latin America of an advanced instrumentation GRID. This will allow European research a competitive edge by giving faster access to collected data and more efficient use of facilities.

Gentileza ESO

Project acronym:  
EVALSO

Contract n°: RI-212891  
Project type: I3

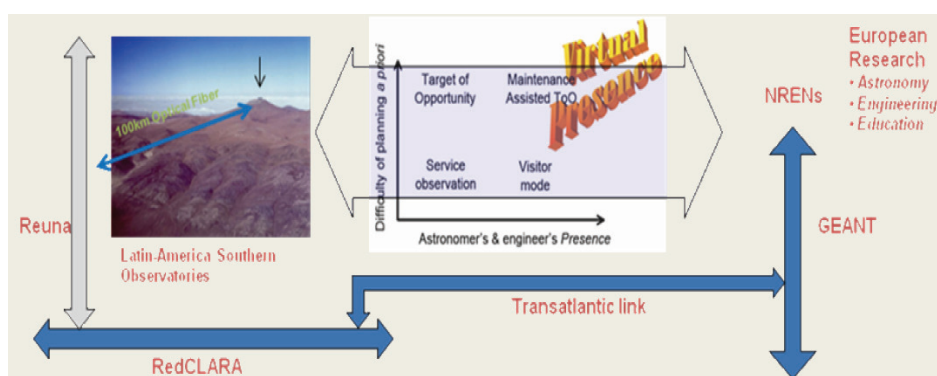
Start date: 01/01/2008  
Duration: 42 months

Total budget: 4,302,036 €  
Funding from the EC:  
1,700,000 €

Total funded effort in  
person-month: 235

Web site:  
[www.evalso.eu](http://www.evalso.eu)

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#### Project participants:

UniTs (Coord)	IT
ESO	I.O.
RUB	DE
GARR	IT
UL	NL
INAF	IT
QMUL	UK
CLARA	UY
REUNA	CL

#### Keywords:

NREN, virtual presence,  
networking infrastructure  
for astronomy

#### Collaboration with other

EC funded projects:

ALICE  
AugerAccess  
GEANT

#### Action plan

The EVALSO project officially started on January 2008 and has 3.5 years duration, ending in June 2011. The EVALSO infrastructure is based on existing infrastructures, both commercial and academic networks, plus the new systems necessary to connect the sites to the first. It is expected to be completed within Q3 2010.

#### Networking activities

The network activities support project management, training, standardization, liaison activities, and dissemination, with special attention given to reaching the Chilean community. This helps foster a supportive relationship with Europe's scientific and cultural environment.

#### Service activities

Service activities include both creation of the physical infrastructure (where not previously existent) and procurement of services in order to upgrade the connectivity to the observing facilities in line with what was decided during the initial market survey. This also requires the set up of the operation procedures and, if applicable, the negotiation of the relevant contracts.

#### Joint Research activities

The general objective of this project is to make possible and validate new ways to interact with remote facilities by exploiting the new capabilities made available by high-bandwidth communications. The project foresees three Joint Research Activities:

**Fast Data Access**, aiming at drastically improving the time needed for making data available from the moment of the physical

observation. As of now this time is of several days (if not weeks) and makes the optimization of observation time, based on feedback provided by the data quality assessment, very difficult to implement in a timely manner.

**Virtual Presence**, to produce tools that could be used to make possible the virtual presence of scientists, engineers, and experts at remote facilities and, even the possibility to perform remote observations. These tools will also be used, in the framework of RUB activities, to demonstrate the possibility of using this technique to train students.

**New Observing Modes**, investigating and concept proofing new observing modes now made possible by the availability of the fast link and the tools developed. Remote presence, together with quasi real-time data availability techniques, will be an invaluable tool to boost the potential of observing unexpected events ('Targets of Opportunity').

#### User communities

Although the project will develop tools and demonstrators in the very specific environment of astronomy, it is envisaged that the same technologies, tools and know-how could be easily applied in other fields.

#### International aspects

EVALSO makes use of the infrastructure of REUNA and RedCLARA and assumes the transit of data through the European federal research network infrastructure (namely ALICE, GEANT, and the European NRENs). Strong relationships with Latin American partners and academic communities are planned.

