

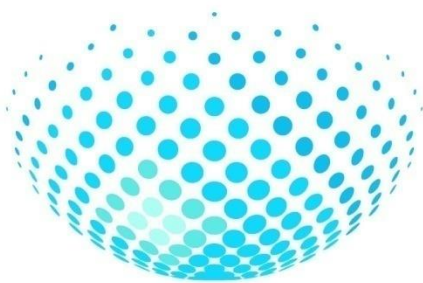


*Workshop for the Implementation of the GGRF in Latin America
Buenos Aires, Argentina, Sep. 16 – 20, 2019.*

Argentine efforts and challenges to install and maintain AGGO operational

Claudio Brunini

AGGO



Observatorio Argentino - Alemán de Geodesia

**ARGENTINEAN - GERMAN
GEODETIC OBSERVATORY**

Argentinisch – Deutsches Geodätisches Observatorium



Institutional framework

*AGGO is a joint effort of Germany and Argentina, carried out by:
Bundesamt für Kartographie und Geodäsie (BKG); and
Consejo Nacional de Investigaciones Científicas y Técnicas
(CONICET).*

The cooperation agreement was signed in 2013.

*According to it, Argentina must assume full responsibility for the
Observatory as of 2023.*

*The experience developed so far has shown both, the need and the
desirability of extending cooperation beyond 2023.*

Currently, the parties discuss a strategic plan for 2023 onwards.

Institutional framework

CONICET is the main funder of Science in Argentina.

Funds are provided in the form of:

Personnel salaries:

Scientists: 10,600 employees.

Technical and administrative: 4,000 employees.

*Doctoral and post doctoral fellowships (5+2 years):
10,900 students.*

Operating funds for research institutes: 1,500 institutes.

Grants for projects: 2,100 funded projects.

Total budget in 2018: AR\$ 13,600 M.

Contribution of the parties

Instruments and infrastructure

BKG provides:

All the observing systems.

Electric power backup systems (diesel generators, solar panels, battery banks, etc).

11 containers that lodge (temporarily) workshops, control rooms of the SLR and VLBI and warehouses.

A variety of specialized instruments and tools.

CONICET provides:

A parcel strategically located between Buenos Aires and la Plata, which is environmentally protected by the UNESCO.

Extension of the access road and power supply line.

Infrastructure for the instruments, laboratories and offices.

High-speed optical fibber connection (capable to support VLBI data transfer).

Contribution of the parties

Budget

BKG provides:

Maintenance and updating of all instruments.

CONICET provides:

Operating expenses, maintenance of the infrastructure and minor investments.

Exchange of equipment (mostly from Germany to Argentina and occasionally in the reverse direction) is addressed in shared manner:

BKG covers international transport;

CONICET process the permissions for duty-free importation and covers transport in Argentina and administrative custom costs.

Contribution of the parties

Personnel

BKG provides:

2 full time experts permanently in Argentina, one serving as Director of Operation of the Observatory.

CONICET provides:

2 full time scientists, one serving as Science Director of the Observatory;

7 full time engineers;

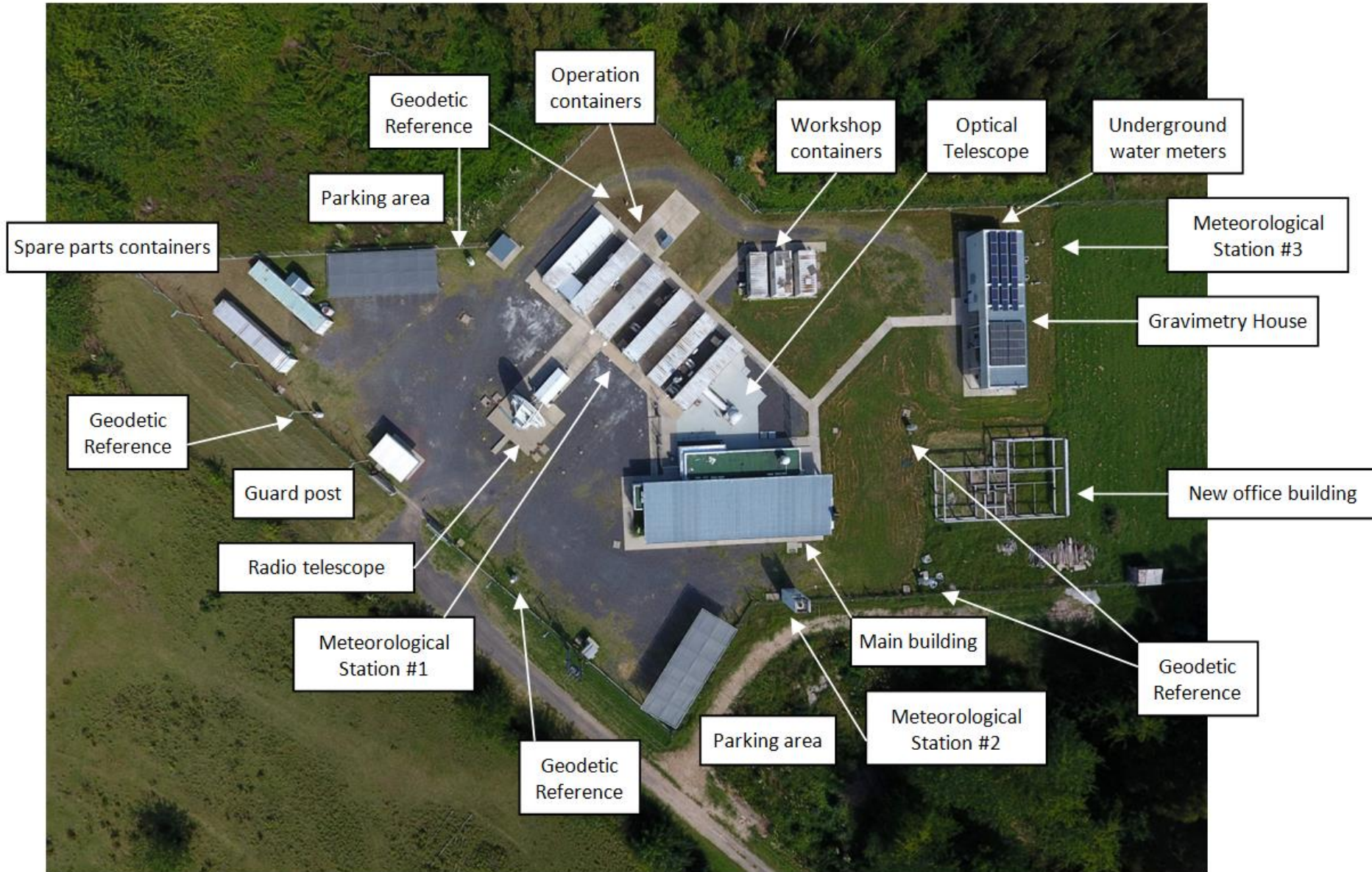
1 administrative;

Surveillance personnel over 24 hours on 7 days a week;

12 technician for SLR and VLBI operation (7 are already in operation and 5 will join AGGO in 2020).

Installation of AGGO

Sep 2019: AGGO today.



Administrative structure

Directing Board

Highest authorities of CONICET and BKG
Define the guidelines
Evaluate the progress
Allocate budget
It meets in Argentina 1-2 times a year



Direction of the Observatory

Execute the plan outlined by the Directing Board
Manage daily business

Scientific Board
BKG, CONICET &
representatives of
national community

Issuing non-binding
recommendation for
maximizing scientific
exploitation of AGGO

Operation Director
Appointed by BKG
(Hayo Hase)



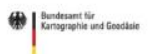
Science Director
Appointed by CONICET
(Claudio Brunini)

Coordination of the
operation of the instruments
Communication with
international services
Arrangements with BKG

Coordination of scientific
plans
Communication with national
and regional communities
Arrangements with CONICET

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Involvement of the national community

The geodetic community of Argentine is distributed in:

Technical organizations (mainly in Buenos Aires)

National Geographic Institute (IGN)

Hydrographical Service (SHN)

Metrologic Entity (INTI)

Space Agency (CONAE)

Institute for Antarctic Research (IAA)

Institute of S&T for Defense (CITEDEF)

...

Universities (throughout the country)

La Plata (UNLP)

Buenos Aires (UBA)

Cuyo (UNCu)

Rosario (UNR)

San Juan (UNSJ)

Santiago del Estero (UNSE)

Tucumán (UNT)

Córdoba (UNCo)

...

Let's try to get the community to go to CONICET to speak in favor of AGGO

A road map for the Argentinean community

First National Workshop on AGGO

CONICET La Plata, April, 2016

Almost all the Argentina's geodetic community:

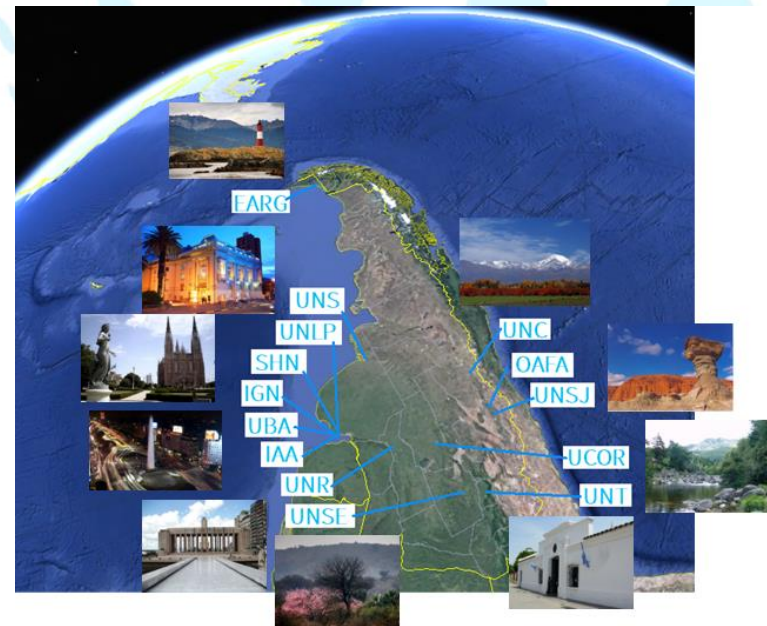
70 attendants / 12 institutions / 7 provinces.

Objective: develop a synergistic plan for the use of AGGO

“The plan of the community in contrast to plans of isolated researchers”.

Identification of three focus areas:

- *Materialization of reference frames for space, time and gravity;*
- *Geodetic study of geophysical signals;*
 - *Capacity building for managing new techniques.*



A road map for the Argentinean community

Materialization of reference frames for space, time and gravity

Establishment of processing and combination centres for GNSS, VLBI & SLR at IGN (with assistance of BKG & GFZ)

Improving Argentine capacities for time realization (INTI, SHN, IGN & CITEDEF)

Geodetic study of geophysical signals

Hydrological and oceanic signals in geodetic observations at AGGO (BKG, GFZ, UNLP, CONICET, CICPBA & SHN)

Improving modelling of astronomical tide and the storm surge in the Río de La Plata (SHN, BKG & UNLP)

Capacity building

La Plata International School (LAPIS) on Space Geodesy Applied to Geodynamics and Atmospheric Research (UNLP, BKG, Dresden & Chalmers universities), November 2017 (Argentina)

SLR in Latin America workshop (with assistance of BKG), SIRGAS Symposium 2017 (Argentina) and SIRGAS Symposium 2019 (Brazil)

Closing remarks

Improving geodetic infrastructure is a target of the GGRF road map.

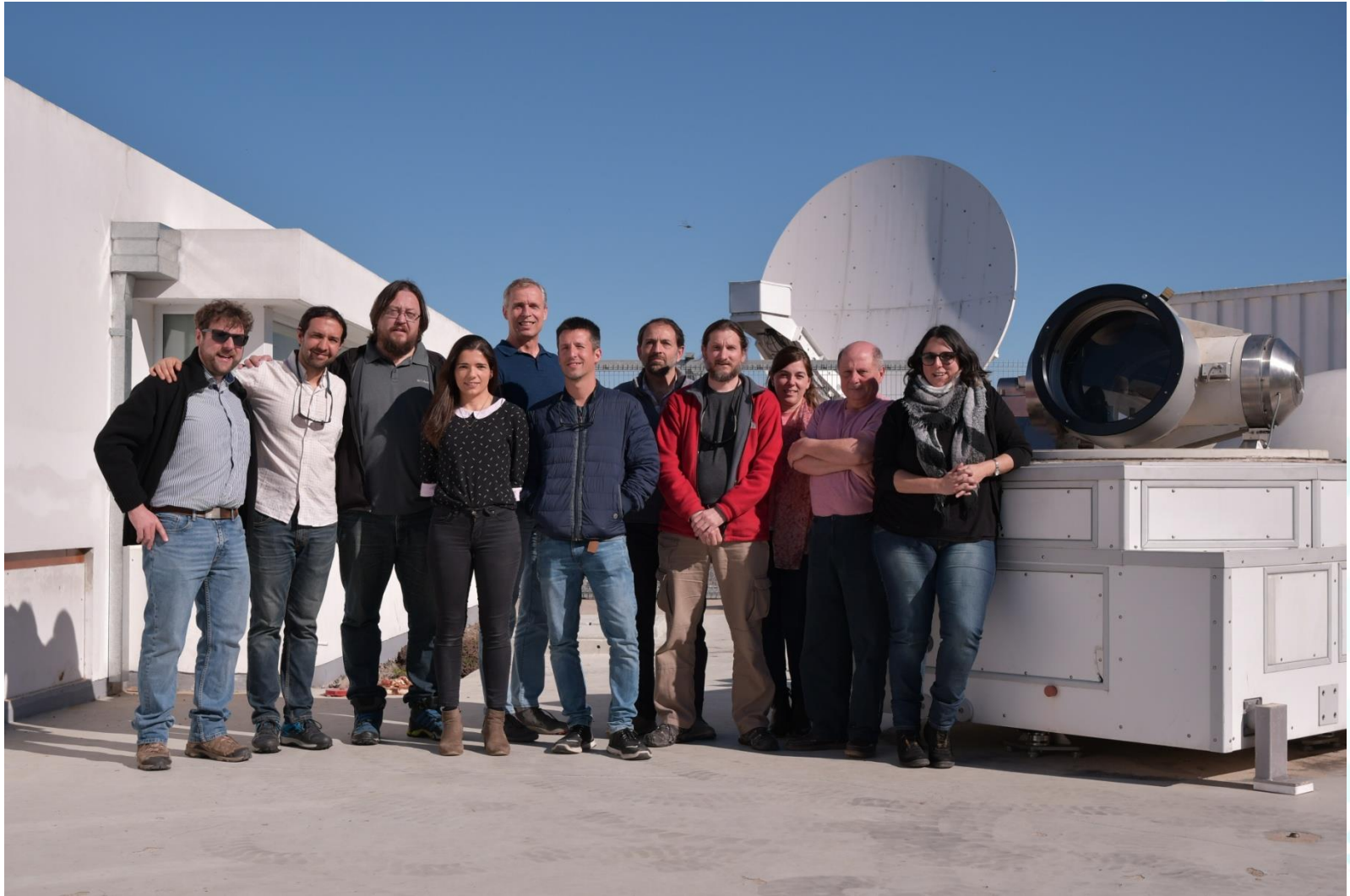
According to UN-GGIM Subcommittee on Geodesy (8th Newsletter):

“no one country can do this alone. For the GGRF to be sustainable, all countries need to play a role, with developed countries providing assistance to the less developed countries where possible. The general consensus is that the willingness to cooperate exists, but clear cooperation mechanisms are lacking, especially as regards the exchange of resources.”

Through AGGO, Argentina and Germany are giving concrete answers to that challenge:

- first, installing and operating a fundamental geodetic observatory that strengthens the materialization of the GGRF in the hemisphere most devoid of cutting-edge instrumentation; and*
- second, by developing and implementing concrete cooperation mechanisms that involves the exchange of resources, technology and knowledge between two countries in different stages of development.*

Thank you very much



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