



Instituto de Altos  
Estudios Espaciales  
"MARIO GULICH"



# Índice

[Mission](#)

[Vision](#)

[Values](#)

[Organization chart](#)

[Authorities](#)

[Directors of training proposals](#)

[Management and administration staff](#)

[IG regulations](#)

[Commissions](#)

[Commissions established in the statute](#)

[Advisory commissions](#)

[Distribution of teaching positions](#)

[Master of spatial information applications \(MAIE\)](#)

[PH.D. in geomatics and space systems \(DGSE\)](#)

[Diplomas](#)

[Postgraduate and advanced courses](#)

[R&D projects](#)

[Publications and events](#)

[Economics](#)

[Communication](#)

# INTRODUCTION

## Mission

The 'Instituto de Altos Estudios Espaciales Mario Gulich' has as its main objective 'to train Human Resources at the postgraduate level with the highest level in theory, concepts and techniques of science and technology applied to remote sensing of the earth, oceans and atmosphere'. Postgraduate training is conceived within the framework of carrying out research, development, innovation and technology transfer activities, under the guidelines of the national spatial plan.

One of the main strengths of the 'Instituto de Altos Estudios Espaciales Mario Gulich' is its interdisciplinary approach to the sciences and technologies applicable to remote sensing, systemically integrating the means for the capture, processing, analysis, interpretation, dissemination and storage of spatial information for peaceful purposes.

## Vision

The actions carried out and planned by the 'Instituto de Altos Estudios Espaciales Mario Gulich' make it a Latin American center of excellence that is a reference in interdisciplinary training in geospatial technologies. The passage through the Institute of graduate students, professors and researchers will increase the knowledge of new experiences and problems in the field of Remote Sensing (Geoscience Remote Sensing - GRS).

## Values

The values of teamwork at 'Instituto de Altos Estudios Espaciales Mario Gulich' are based on transparency, ethics, quality, solidarity, generosity and respect. A document that refers to them can be found in the attached document named 'Mistica del IG'.

# BACKGROUND

The 'Comisión Nacional de Actividades Espaciales Argentina' (CONAE) was created in 1991 with the mission of proposing and executing the Strategic National Space Plan. CONAE focuses on generating spatial information on the continental and maritime territory of Argentina. On the other hand, the 'Universidad Nacional de Córdoba' (UNC) is an institution of national and international relevance in terms of both training of human resources and researchers of the highest academic level.

In 1997, these two institutions signed a framework agreement (Resolution Honorable Superior Council - RHCS N° 57/1997), in order to meet the demand for trained professionals in the use and application of spatial information, with the intention of creating a center of excellence for research and training of human resources: '**Instituto de Altos Estudios Espaciales Mario Gulich**' (IG).

The training of human resources began with multidisciplinary work oriented towards telemedicine. With the inclusion of CONAE in the International Charter Space and Major Disasters (<https://disasterscharter.org/web/guest/home>), the IG stood out as a reference in the training of human resources throughout Latin America, in the use and application of spatial information and in the advanced processing of satellite images for emergency management.

The study of spatial information applications to health led to the development and consolidation of a line of research known as '*landscape epidemiology*' which covers the study of vector-borne diseases such as dengue, sika, chicunguña, malaria, Chagas-Massa disease, hemorrhagic fever, hantavirus and leishmaniasis. Free intensive courses and workshops were held to meet the training needs in the area.

Based on these training experiences and with the aim of meeting the country's needs, the CONAE and the UNC, with the support of the Italian Spatial Agency (ASI), created in 2009 the *Master's Degree in Space Applications for Early Warning and Response to Emergencies*. With **74 graduates**, the now called *Master's Degree in Space Information Applications* includes in its studies all the information cycles provided for in CONAE's National Space Plan. The fields of study and training expanded to include the management of natural and

anthropogenic emergencies, health, geology, cartography, surveying nutrition, air pollution and water resources, meteorology, agricultural resources and forestry, security, informatics and sensor calibration algorithms, among others. The graduates come from Argentina, Chile, Colombia, Ecuador, Italy, Paraguay, Peru and Venezuela.

The opening of the Ph.D. in *Geomatics and Spatial Systems* of the IG in 2019 consolidates the vocation of training human resources at the highest academic level.

The IG currently offers two postgraduate courses, three diplomas and 30 postgraduate and advanced courses. In line with postgraduate training, research and technological development are also other relevant aspects in the development of the IG.

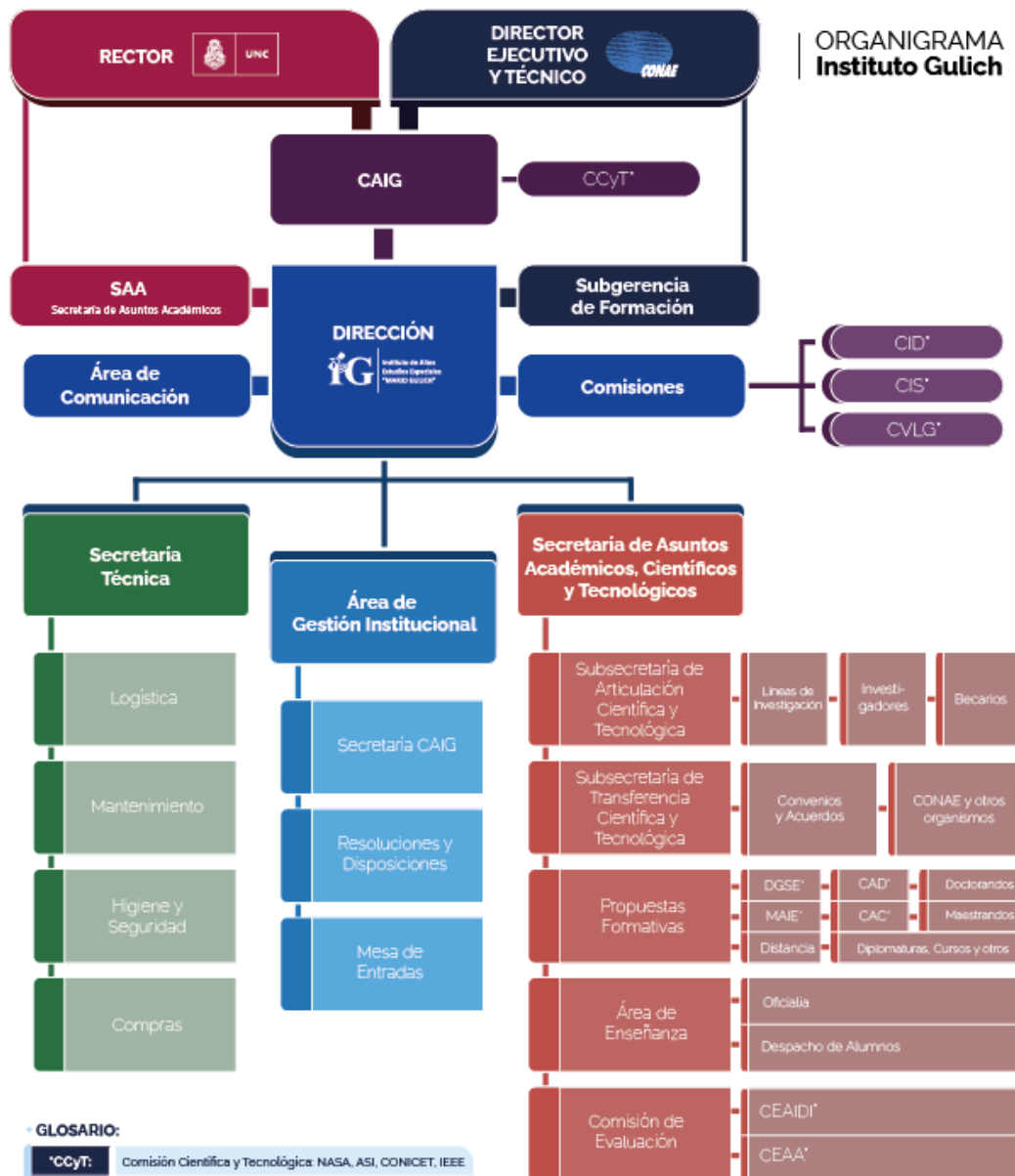
The academic and scientific activities carried out in the IG are reflected in annual reports. In Annex I of this document, you will find those corresponding to the years 2018 and 2019.

## ORGANIZATION

The agreement between CONAE and the UNC (RHSC of the UNC N°57/1997) establishes that the IG's Governing Body will be made up of a Director appointed by the UNC at CONAE's proposal, an Alternate Director and an Academic Council (CAIG). This form of organization was ratified in the Statute of the IG, and approved by resolution of the Honourable Superior Council of the UNC N° 62/2019.

The currently IG structural organization chart is shown in the following figure, where the functions of each of the areas are highlighted.

# Organization chart



**GLOSARIO:**

*CCyT:	Comisión Científica y Tecnológica: NASA, ASI, CONICET, IIEE
*CID:	Comisión de Indicadores de Desempeño.
*CIS:	Comisión de Indicadores de Satisfacción.
*CVLG:	Comisión de Violencia Laboral y Género.
*CEADI:	Comisión de Evaluación de Actividades de Investigación, Desarrollo e Innovación Tecnológica
*CEAA:	Comisión de Evaluación de Actividades Académicas.
*DGSE:	Doctorado en Geomática y Sistemas Espaciales.
*MAIE:	Maestría en Aplicaciones de Información Espacial.
*CAD:	Consejo Académico del Doctorado (DGSE)
*CAC:	Consejo Académico de la Carrera (MAIE)

## Authorities

- **Academic Council (CAIG):**

- Members**

- Dra. Cecilia Cravero (UNC)
- Dr. Marcelo Oglietti (CONAE)
- Dr. Pablo Recabarren (UNC)
- Dra. Gabriella Arrigo (CONAE/ASI)

- Alternates**

- Dr. Pablo Servidia (CONAE)
- Dr. Daniel Barraco Díaz (UNC)

- **Director:** Dr. Carlos Marcelo Scavuzzo (CONAE/UNC)
- **Alternate Director:** Dra. Cecilia Cravero (UNC)
- **Secretary for Academic, Scientific and Technological Affairs (SACCyT):** Dr. Anabella Ferral

- **Undersecretary for Science and Technology Transfer (STCyT):** Dr.

Ximena Porcasi

- **Undersecretary for Scientific and Technological Articulation**

**(SACyT):** Dr. Ximena Porcasi

- **Academic Advisor:** Dr. Nesvit Castellano
- **Technical Secretary:** Lic. Jorge Rubio

## Directors of training proposals

- **Director of the Ph.D. in Geomatics and Space Systems (DGSE):** Dr. Carlos Marcelo Scavuzzo
- **Director of the Master's Degree in Spatial Information Applications (MAIE):** Mgter. Santiago Seppi
- **Director of Distance Education:** Mgter. Sofia Lanfri

## Management and administration staff

- **Head of Institutional Management:** Mgter. Gastón González Kriegel
- **Students' Office responsible:** Lic. Carolina Mazzetti
- **DGSE Secretary:** Mgter. Eliana Alvarez Di Fino
- **Communication and design responsible:** Lic. Juan Ledesma y D.I. Veronica Schöler

## IG regulations

The following is a list of the regulations governing the functioning of the IG. Copies of each and every one of them can be found in Annex II.

- CONAE/UNC Agreement: RHCS N° 57/1997
- IG Statute: RHCS N° 62/2019
- Academic regulations: RR N° 2147/2003
- Organization chart SAACyT: RCAIG N° 02/2020

## Commissions

- CEEA: RCAIG N° 03/2020
- CAVLG: RCAIG N° 04/2020
- CEA I+D+I: RCAIG N° 13/2020
- CCyT: Article 9 of the Statute

## Commissions established in the statute

- **Scientific and Technological Council (CCT, Article 9 Statute, appointed by RCAIG N° 21/2020):**

It operates independently and is made up of six (6) experts in the field of space. The task of the CCT is to advise the IG Director and the CAIG on scientific and technological issues

related to the activities of the IG.

## Advisory commissions

- **Advisory Commission on Labor and Gender Violence (CAVLG) (RCAIG N° 04/2020):** Directly under the control of the Director of the IG, it deals with issues related to decent work and gender equality through institutional policies of promotion, awareness, education and construction of equalitarian practices and coexistence in all the areas of the IG. The main objective of the CAVLG is to promote a working environment free of violence.
- **Ad Hoc Commission for the Evaluation of Research, Development and Technological Innovation Activities (CEA I+D+I) (RCAIG N° 13/2020):** Under the direction of the Secretariat of Academic, Scientific and Technological Affairs of the IG (SAACyT), it aims to evaluate any new research, development and technological innovation activity (R&D) that is proposed to be developed in the field of the IG. The current Director of the IG has prepared a report with the tasks carried out in the first 100 days of work, which is attached to this report ('Reporte de los 100 primeros días de gestión').
- **Advisory Commission for the Evaluation of Academic Activities (CEAA) (RCAIG N° 03/2020):** Under the direction of the SAACyT, its objective is to attend to the organization and follow-up of all academic activities that are developed in the IG.

## ACADEMIC ACTIVITIES

The IG is currently consolidating its training proposal with two postgraduate courses, three diplomas taught in the distance learning mode and postgraduate and advanced courses

## Distribution of teaching positions

The teaching staff of the IG consists of 12 teaching positions, given by the CONAE and the



UNC, and distributed in 3 positions of Assistant Professor, 6 positions of Adjunct Professor, one position of Associate Professor and two positions of Head Professor. In addition, these entities pay for one administrative and management position.

For the teaching of specialized courses, the IG convenes professionals and researchers from CONAE and the UNC and specialists from prestigious national and foreign universities.

## Master of spatial information applications (MAIE)

The Master in Space Applications for Early Warning and Response to Emergencies (MAEARTE), renamed in 2015 as the Master in Space Information Applications (MAIE), arises from the joint proposal of the 'Facultad de Matemática Astronomía, Física y Computación' of the UNC and the IG in 2007. In 2009, the first cohort was opened with 13 students from different Argentinian provinces and Ecuador with a full-time scholarship modality financed by CONAE. In 2015, a change was made to the degree and the curriculum of the course, renaming it the "Master's Degree in Space Information Applications". In 2016 the 'Comisión Nacional de Evaluación y Acreditación Universitaria' (CONEAU) accredited the degree with the highest level (A).

Since 2009, 111 students have registered of which 73 (66%) have graduated, 21 (19%) are doing their final master's work, 13 (12%) are still studying and 4 (3%) were withdrawn.

A detailed analysis of the achievements of this Master's course is given in Annex III of this report.

## PH.D. in geomatics and space systems (DGSE)

The DGSE arises as a necessity for Argentina and the region to have a degree that brings together more than 20 years of work and experience at the IG. The DGSE focuses on the training of human resources of the highest academic level and the corresponding generation of new knowledge on the theory, concepts and techniques of science and technology applied to remote sensing of the earth, oceans and atmosphere.

This degree was approved by the Superior Council of the UNC in 2017 (RHCS 1311/2017) and by the National Ministry of Education (RESOL\_2019\_2221-APN-MECCYT) which grants national validity and provisional recognition of the degree.

Annex IV contains details of this postgraduate course, which is unique in our country and the region.

## Diplomas

The UNC offers a normative framework for academic and technical training to all those who need to broaden or perfect their knowledge on a specific subject, without the need for a degree.

The IG, through its distance learning modality, offers the following Diplomas:

- 1) Diploma in Geomatics applied to Health
- 2) Diploma in Geomatics applied to Agricultural Production
- 3) Diploma in Geomatics Applied to the Environment.

These have been taught by the IG and have been approved by around 200 students from Argentina and countries in the region.

Details of the achievements of these diplomas are given in Annex V of this report.

## Postgraduate and advanced courses

Within the framework of the regulations established by the UNC, the IG also offers postgraduate and advanced courses. The advanced courses are offered in the distance learning mode (Annex V) and the postgraduate courses in the classroom mode.

The postgraduate courses given by the IG, an extension of the courses offered for the Master's degree, are taken as training courses in geomatics by doctoral students from different faculties of the UNC and other national and international universities

# SCIENTIFIC AND TECHNOLOGICAL ACTIVITIES

## R&D projects

Currently, the IG is carrying out 6 (six) lines of research:

- 1- Panoramic Epidemiology
- 2- Agricultural Production and Food Security
- 3- Geospatial Data Science
- 4- Space Applications for Warning and Early Emergency Response
- 5- Monitoring and Modelling of Environmental Quality Indicators
- 6- Biodiversity and Ecosystem Services

The teams are made up of 19 scientific researchers and 17 doctoral and post-doctoral interns. In Annex VI, there is a detailed analysis of the lines of research developed in the IG, where the research projects that integrate each line of work are described.

## Publications and events

The development of the research projects carried out in the IG lead to results that are published in indexed, national and international journals. From 2018 to the present, the different lines of work have given place to 70 publications.

In Annex VII of this report, the publications corresponding to the last years are detailed.

## Economics

The IG develops its activities, receiving funding from the CONAE, the UNC and other national bodies for the promotion of Research: CONICET and the National Ministry of Science and Technology.

Some of the courses taught, such as the Diplomas, Postgraduate and Advanced Courses are self-financed through a contribution made by the students.

## Communication

The IG has a communication area that is in charge of making the IG visible and providing information to society in general. Its communication strategies, through different media (website, Facebook, Instagram, LinkedIn, Youtube), are focused on the generation of material in four major content areas that include news, mysticism and values, scientific developments and legacies of the IG.

A detail of the activities and achievements in this area can be found in Annex VIII of this report.