

Report

Presentation of Commission's members

The Commission's members made a round of introductions, stating their names, roles, institutions and previous relevant experience in Earth Observation matters and with Instituto Gulich.

Assessment of IG's activities

The discussions centered on the Ph.D. program. The members agreed that a previous short presentation by representatives of the Program would have been useful. The STC requested additional information on courses taught and a short presentation from the Director to provide context for the documents provided prior to the meeting.

Assessment of the presented report

The STC recommends that the scope of the STC Review be presented prior to the meeting. The STC also strongly recommends that there should be presentations from the Director at the beginning of the review meeting to provide context for the review. A brief summary of the budget available to IG would be useful as a part of the Director's presentation.

The Committee assessment was organized as a SWOT analysis and a summary of recommendations whose main elements are the following:

Strengths

- Strong focus on relevant applications
- Flexible structure which allows fast adaptation to new trends and needs, also the ability to invite prominent researchers to participate

- Excellent presence in Latin America

Weaknesses

- The report did not include information about the courses academic contents.
- It seems the program has little structure in terms of courses, activities, credits, etc.
- There was not enough information about the relationships with other Universities, Research Labs, Governmental branches, and firms.
- Detailed information regarding the different lines of investigation at IG was missing; information was sent to the STC after the meeting.
- Detailed documentation supporting the Main Report was in Spanish which made it difficult for the international non-spanish speaking reviewers (5 out of 6) to evaluate it.

Opportunities

- Expand the course's footprint to other underrepresented Countries, also outside Latin America
- Consolidate the mission of IG and define a multi-year scenario for the future
- Create a market for high-quality remote sensing products which are supported by sound academic activities
- Make the course even more relevant by including topics such as
 - Suggested topics for the curricula (and):
 - Hyperspectral
 - Polarimetry (all aspects)
 - Applications to fields like water quality management and fisheries
 - UAVs
 - Cloud computing
 - Data Science and Deep Learning
 - Open data
 - Reproducibility and replicability

- Ethical communication with other scientists, firms, and the society
- Also, enhance connections with firms that work on these and other relevant topics
- Strengthen connections to other departments in the university to provide additional courses and resources in fields such as design, testing, calibration of sensors, integration into UAVs etc.
- Seek pathways for the Diploma course to recruit students already working in government, NGO and private sectors and make a name brand for Gulich alumni.
- Create an alumni network.

Threats

- Lack of unified vision
- A Ph.D. should look into the future, it should even create it, rather than being only reactive to current demands
- Failure to answer societal needs
- Disconnection to IG's vision
- Negative influence of politics in the operations of the Program

Organization and operation

Introduce, as the reference planning tool for the Institute activities a three-year plan (sliding?), prepared by the Management, endorsed by the STC, to be approved and funded through the yearly budget.

Consider the opportunity to become part of networks of similar institutions in other Countries.

Recommendations on medium and long-term work

Develop a strategy for growth and hiring based on a vision to make remote sensing a core part of the economy and meet societal needs. A formal recommendation from the STC is for the Gulich Institute to be provided the resources to implement this strategy (as approved by the STC).

Hire permanent faculty to grant the Program a vision and a stable common structure.

Invite renowned international researchers to be co-advisors of PhD students, thus enhancing collaborations and interaction with external groups.

Explore the option of developing a broad pool of multidisciplinary 'Adjunct Faculty' members to expand the Institute's scope of expertise.

Refer to the "Opportunities" in the SWOT analysis above.

Create a channel for students to communicate with the Committee without intervention from IG. Ask them to participate in the report of activities. Do they have an established representation?

Increase the link between education, R&D, and "real" users ensuring students' participation to projects and lead to potential jobs when they graduate (may be it is already the case but it is not evident from the report)

Consider a new line for implementation both for R&D and courses in relation to the Sustainable Developments Goals (SDG's). On one side Earth Observations data, according to the work of

CEOS within GEO, constitute a key resource for the achievement of SDG's and on the other they constitute the ultimate interdisciplinary area for applications.

Consider a potential role of IG in leading the activities to prepare the optimal use of new EO missions, thus representing the interest of the users during the mission development and implementation (e.g. establish "early adopters" programs with IG for the different missions as an educational tool).

Communications, how to increase the visibility of the IG and to promote its activities. From the report, the majority of the visits to the website are related to the educational section. And this is consistent with the structure of the website where there is almost any information on R&D Projects.

The recommendation is to increase the visibility of the R&D projects to attract also users looking for solutions or for support. Content to put online may include:

- List of all projects (completed and on-going);
- Results of the completed projects (reports, products, tools, software)
- List use cases and successful applications
- List of projects' participants (users, R&D entities, companies) with short description of their skills.

Ana Dogliotti (Conicet, Argentina)

Gene C. Feldman (NASA, USA)

Alejandro C. Frery (Victoria University of Wellington, New Zealand)

Roberto Ibba (ASI President's Cabinet and e-GEOS President, Italy)

Giovanni Rum (ASI Associate member and former Head of EO Unit, Italy) Ajit Subramaniam (Columbia University, USA)

23 December 2020