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IGS Constellations

The Newsletter of the International GNSS Service

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The IGS 2021+ Strategic Plan

by Allison Craddock

In 2020, despite a global pandemic and interruptions in our life and work schedules, the IGS continued to sustain our community's needs. While delivery of the IGS reference frame, orbit, clock and atmospheric products continues to drive the core activities, the IGS transformation to a multi-GNSS service is of highest priority, and is reflected both directly and indirectly throughout the 2021+ Strategic Plan.

The IGS continues to coordinate a collaborative research infrastructure and provide operations at the global scale, operating as a service of the International Association of Geodesy (IAG), and a contributor to the Global Geodetic Observing System (GGOS). Together, we can build a strong, sustainable, and resilient Multi-GNSS future for our community and the public we serve.

This plan was developed by the IGS Governing Board with the help and support of the Central Bureau, and guided by extensive community feedback and discussions. It presents a forward-looking strategy addressing the role of IGS as facilitator, incubator, coordinator, and advocate working towards three major goals in service to our community and beyond.

The plan focuses on how the IGS maintains and enhances its leadership role within the broader GNSS community, as societal demands for GNSS products and services continues to grow. Central to the goals and objectives are the complementary roles of the IGS as a collaborative research program, as well as an operational service. The plan seeks to maintain appropriate balance of the two roles to ensure ongoing support from associate members and collaborating organizations.

The IGS 2021+ Strategic Plan has been balanced to address both internal and external factors driving IGS organizational growth towards multi-GNSS technical excellence. By setting our first goal to “achieve multi-GNSS technical excellence” we strive to increase organizational capability by identifying barriers to multi-GNSS success throughout the IGS, supporting solutions to key challenges, and reinforcing the importance of continuous technical evolution.

Our second goal is to “strengthen outreach and engagement.” Objectives of this goal will guide advocacy for open access geodetic and GNSS data and products that facilitate collaborations, standardization, and inclusivity. Looking forward, implementation of this plan will include our third goal of ensuring sustainable and resilient contributions to the IGS community and its work, as it is the diversity of contributors to the IGS as well as their high levels of commitment that have ensured the high level of performance and reliability of product generation and delivery thus far.

The plan continues in the spirit of previous strategic plans in that it is intended to guide our service to the community, and is not intended to be restrictive. It is our hope that the guidance in this plan will ensure the best possible IGS for the ever-growing community of users relying upon its openly available high-quality GNSS data and products.

To view and download the 2021+ Strategic Plan, go to the [IGS 2021+ Strategic Plan page](#) on [igs.org](#).





GOAL 1

Achieve Multi-GNSS Technical Excellence

by Mayra Oyola

The International GPS Service for Geodynamics was founded with the intention of creating precision GPS products in support of the international Earth science community. In 1994, it became an approved service of the International Association of Geodesy (IAG) and was rebranded as the International GPS Service (IGS). The primary objective of the IGS expanded to provide a service to support, through GPS data products, geodetic and geophysical research activities.

Upon its inception, the IGS became a recognized service for applying the existing network of 112 GPS ground stations to shorten rapid orbit and precise orbit determination productions, exploring new applications for atmospheric and climate monitoring and the use of GPS and IGS stations for the monitoring of sea level.

To continue reading this article, go to [Achieve Multi-GNSS Technical Excellence Full Article](#) on [igs.org](#).

Figure 1 shows WARK00NZL, an IGS station, operated by GNS Science Te Pu Ao on behalf of Toitū Te Whenua Land Information New Zealand and New Zealand Earthquake Commission as part of the GeoNet programme. Co-located with a VLBI station in Warkworth, Auckland (New Zealand) Photo Courtesy of Miles Ryan.



Figure 1



Figure 2



GOAL 2

Strengthen Outreach and Engagement

by José Antonio Tarrío Mosquera

The University of Santiago de Chile formally entered SIRGAS (Sistema de Referencia Geodésico para las Américas) in 2016 as a data center, installing the USCL GNSS station (which today is about to become the IGS network station). That small geodetic milestone of the University opened a path of knowledge in Geodesy and GNSS little exploited before in the institution.

In some parts of the world, having free and open GNSS data is complex, making it difficult for students to work, interact and learn about GNSS and Geodesy. Before the pandemic, this aspect was solved by capturing data in the field, but from 2020 to mid-2021, geodetic campaigns were not an option. Since then, the IGS role in our GNSS classes has been essential, turning its data and products and its website into central tools for Geodesy subjects.

To continue reading this article, go to [Strengthen Outreach and Engagement Full Article](#) on [igs.org](#).

Figure 2 showcases satellite geodesy practices carried out by the students of the USACH (University of Santiago de Chile) monitoring the Villarrica Volcano (39 ° 25'S - 71 ° 56'W) in the SOUTH of Chile. Photo Courtesy of José Antonio Tarrío Mosquera.



GOAL 3

Build Sustainability and Resilience

by Mayra Oyola

There are currently two ways for the GNSS community to get involved with the IGS: the first path is as a subscriber to our community announcements. If you would like to learn about IGS analysis products and data, how to join a Working Group, and much more,, we invite you to subscribe to our mailing lists ([IGS Mail](#)) - IGS mail is our primary list for news and announcements, with the largest number of subscribers, while Working Group lists are organized by topic. Similarly, we encourage you to join us, virtually or in person, at one of our upcoming virtual and in-person events, including our 2022 IGS Workshop in Boulder, Colorado, USA..



The second path towards involvement in the IGS is by becoming an Associate Member (AM). While everyone can become a subscriber to our community, AMs are required to be persons representing organizations that participate in any of the IGS components. While we strive to have a membership that is balanced with respect to IGS components, organizational representation, and geography; AMs are selected to represent institutions that contribute significantly to the IGS on a continuous basis. Additionally, along with the Governing Board Members, AMs are also responsible for the nomination and election of the IGS leadership, such as in this year's elections, which open on 22 November.

In that spirit, please join us in welcoming our new Associate Members:

1. Mr. Mark Murray, United States Geological Survey, USA
2. Mr. Juan Croquis, Instituto Geográfico Militar, Uruguay
3. Mr. Paul Ries, NASA Jet Propulsion Laboratory, USA
4. Dr. Mohammad Ali Goudarzi, Natural Resources Canada, Canada
5. Mr. Bigyan Banjara, National Mapping Agency Nepal, Nepal
6. Dr. Wan Anom Wan Aris, Universiti Teknologi Malaysia, Malaysia
7. Dr. Ningbo Wang, Chinese Academy of Science, China
8. Dr. Ghadi K. A.Younis, Palestine Polytechnic University, Palestine
9. Dr. Rishiraj Dutta, Asian Disaster Preparedness Center, Thailand
10. Prof. Krzysztof Sośnica, Wrocław University of Environmental and Life Sciences, Poland
11. Mr. Brandon Owen, Geoscience Australia, Australia
12. Mr. Phillip Lamothe, Natural Resources Canada, Canada
13. Dr. Bingbing Duan, Technische Universität München, Germany
14. Prof. Chalermchon Satirapod, Chulalongkorn University, Thailand
15. Dr. Susanne Glaser, GFZ German Research Centre for Geosciences, Germany
16. Prof. Mohamed El Hoseney A. El Tokhey, Ain Shams University, Egypt
17. Dr. Salim Masoumi, Geoscience Australia, Australia
18. Mr. Vincent Clive Rooke, Geoscience Australia, Australia
19. Dr. Hiroshi Takiguchi, Japanese Aerospace Exploration Agency, Japan
20. Dr. Georgia Katsigianni, Collecte Localisation Satellites, France
21. Mr. Chiranjeevi G. Vivek, CSIR Fourth Paradigm Institute, India

To learn more about how to become an associate member and ways to participate in the IGS, visit [Associate Membership page](#) on [igs.org](#).

IGS Member Highlight



Dr. Elisabetta D'Anastasio

Science Operations Technical Lead at GNS Science
Governing Board Member at the International GNSS Service New Zealand

I was honored (and surprised!) to be appointed as part of the IGS Governing Board in January 2020. IGS, with its fundamental work, has democratized the use of GNSS data for a vast number of applications. I am excited to be part of this journey. I am interested in the use of GNSS data for natural hazards monitoring and in applying data principles (such as FAIR) to maximize the sharing and use of GNSS data across the science sector. I'd like our collective work to support a full exploitation of GNSS data by leveraging the increase in computing capacity, global connectivity and available GNSS signals we are experiencing in recent years. I am particularly interested in increasing inclusivity within IGS, and I believe that successful outcomes can only be achieved with strong international collaboration and openly sharing data and solutions.

Station Highlight

ACRG00GHA

Location: Accra, Ghana

Established: 1996

Data Center: CDDIS



Highlighted Quarterly Publications

To view these publications,
visit igs.org/pub-alerts

**Mission Earth – Geodynamics and
Climate Change Observed Through
Satellite Geodesy**

By D. Angermann, R. Pail, F. Seitz, U.
Hugentobler

Welcome to the #IGSnetwork

Welcome NABG in Ny-Ålesund, Norway; MSSA in Misasa, Japan; and JDPR in Jodhpur, India to the #IGSnetwork! Thanks to Bundesamt für Kartographie und Geodäsie (BKG) Germany, Japan Aerospace Exploration Agency (JAXA), and Indian Space Research Organisation (ISRO) for providing these resources to the IGS community. For more info on NABG, MSSA, JDPR and other IGS stations, visit the [Network page](https://igs.org/network) on igs.org.



Station Name:
NABG00NOR

Location:
Ny-Ålesund, Norway



Station Name:
MSSA00JPN

Location:
Misasa, Japan



Station Name:
JDPR00IND

Location:
Jodhpur, India

“Connected by GNSS”



4th Associate Member & Working Group Open Meeting “Connected by GNSS”

We are happy to announce that we will hold a virtual Associate Member and Working Group morning open meeting on **Monday, 6 December 2021 at 21:00 UTC via Zoom**.

The Open Associate Member meeting is open to all IGS Associate Members, Governing Board, and Former Governing Board Members of the IGS, and observers who would like to learn more about the IGS. Its intention is to be a forum for our Associate Members and friends to gather in between workshops to discuss ideas, learn about the IGS and its Working Groups. Visit the [event page on igs.org](https://igs.org/event) to learn more and register for the event.

Upcoming Events

07 December 21:00 UTC:
[IGS Governing Board Meeting](#)

22 November - 7 December:
[IGS Governing Board Elections](#)

13 - 17 December:
[AGU Fall Meeting 2021](#)

27 June - 1 July 2022:
[IGS Workshop 2022](#)