



Introducing the International GNSS Service (IGS)

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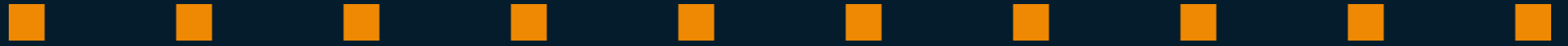


Jet Propulsion Laboratory
California Institute of Technology

International Federation of Surveyors (**FIG**) Congress and
FIG Reference Frames in Practice Seminar

10-15 September 2022

Warsaw, Poland



01

About the IGS



**Providing openly
available GNSS
data and products
that benefit science
and society.**



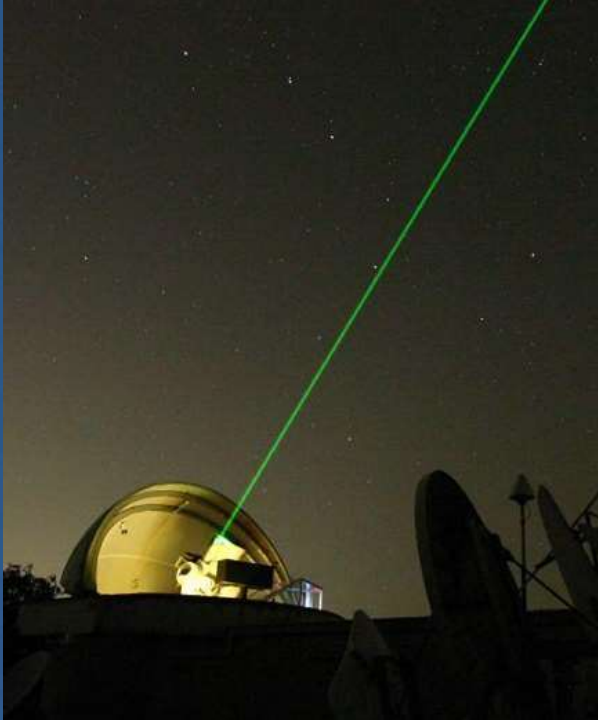
IGS Mission

The International GNSS Service (IGS) provides, on an openly available basis, the **highest-quality Global Navigation Satellite System (GNSS)** data, products, services in support of: the Terrestrial Reference Frame; Earth observation and research ; Positioning, Navigation and Timing (PNT); and other applications benefitting science and society



What is the IGS?

The IGS is a voluntary federation of over 200 self-funding agencies, universities, and research institutions in 43 countries/regions; working together to freely and openly provide high-precision GNSS satellite orbits to an ever-expanding global user community.



A technical service of the International Association of Geodesy (IAG)



Global Navigation Satellite Systems (GNSS)



Satellite Laser Ranging (SLR)



Very Long Baseline Interferometry (VLBI)

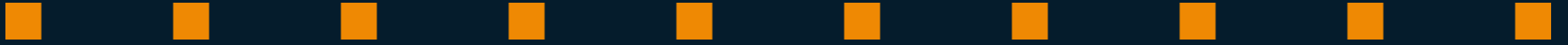


Doppler Orbitography by Radiopositioning Integrated on Satellite (DORIS)*

IGS Products

The IGS collects, archives and distributes GNSS observational data sets of high quality to satisfy the objectives of a wide range of scientific and other high-end applications and experimentation. These data sets are used by the IGS to generate the following data products:

- High accuracy GNSS satellite ephemerides and related information
- Earth rotation parameters
- Coordinates and velocities of the IGS tracking stations
- GNSS satellite and tracking station clock information, timescale products
- Ionospheric information
- Tropospheric information



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IGS Components



IGS Components

- Networks of tracking stations
- Data Centers (DCs)
- Data Center Coordinator (DCC)
- Analysis and Associate Analysis Centers (ACs, AACs)
- Analysis Center Coordinator (ACC)
- Working Groups, Pilot Projects (WG, PP)
- Coordinators for products or components
- Central Bureau (CB)
- Governing Board (GB) and Committees
- Associate Members

IGS Network

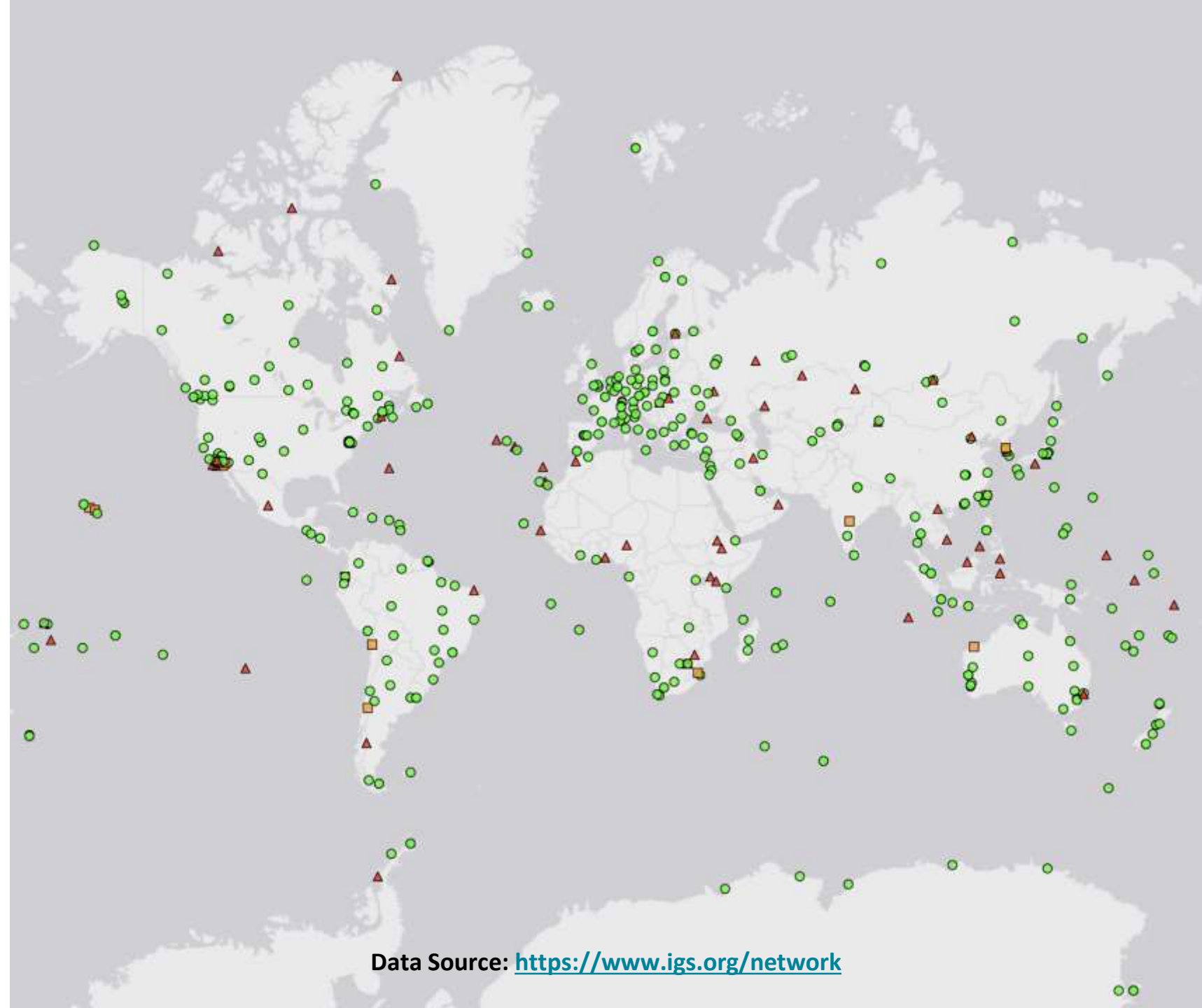
500+

Stations in over

100

Countries/Regions

To view all stations, visit
<https://www.igs.org/network>



Data Source: <https://www.igs.org/network>

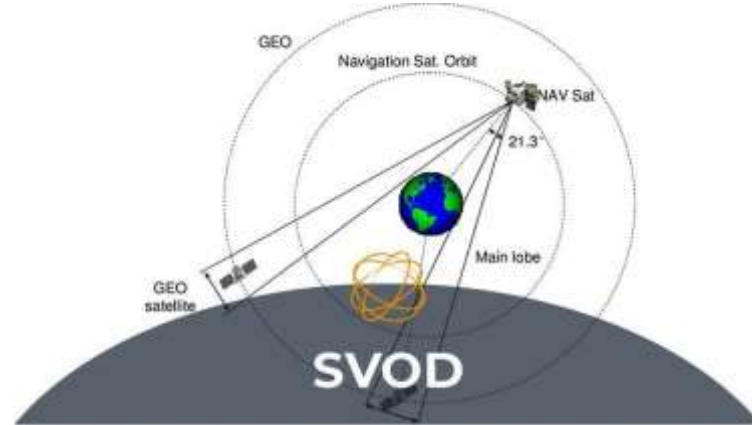
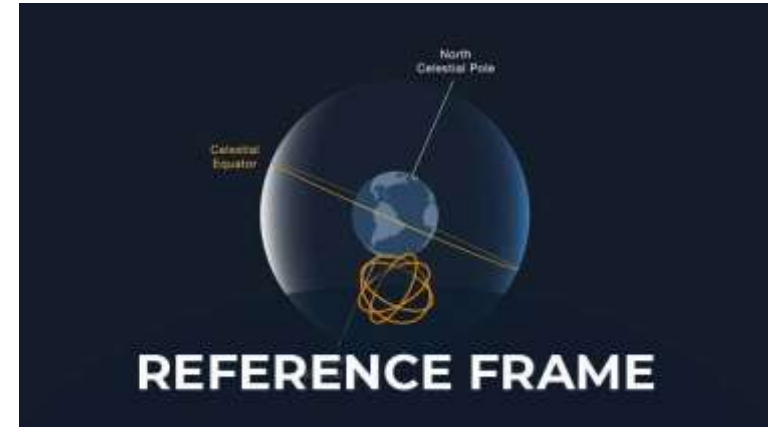
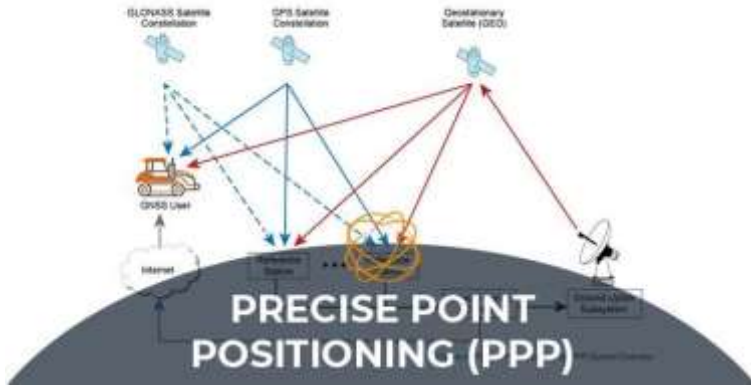
IGS Working Groups

- The IGS technical Working Groups work on topics of particular interest to the IGS, such as improving the IGS products and infrastructure.
- Within the Working Groups, a Pilot Project structure has been defined whereby new capabilities or products are envisioned, developed, tested, and prepared for production.
- Open Associate Member and Working Group Meetings held in years without IGS Workshop

IGS Working Groups, Pilot Projects, and Service



IGS Working Groups, Pilot Projects, and Service



IGS Working Groups, Pilot Projects, and Service



IGS Committees





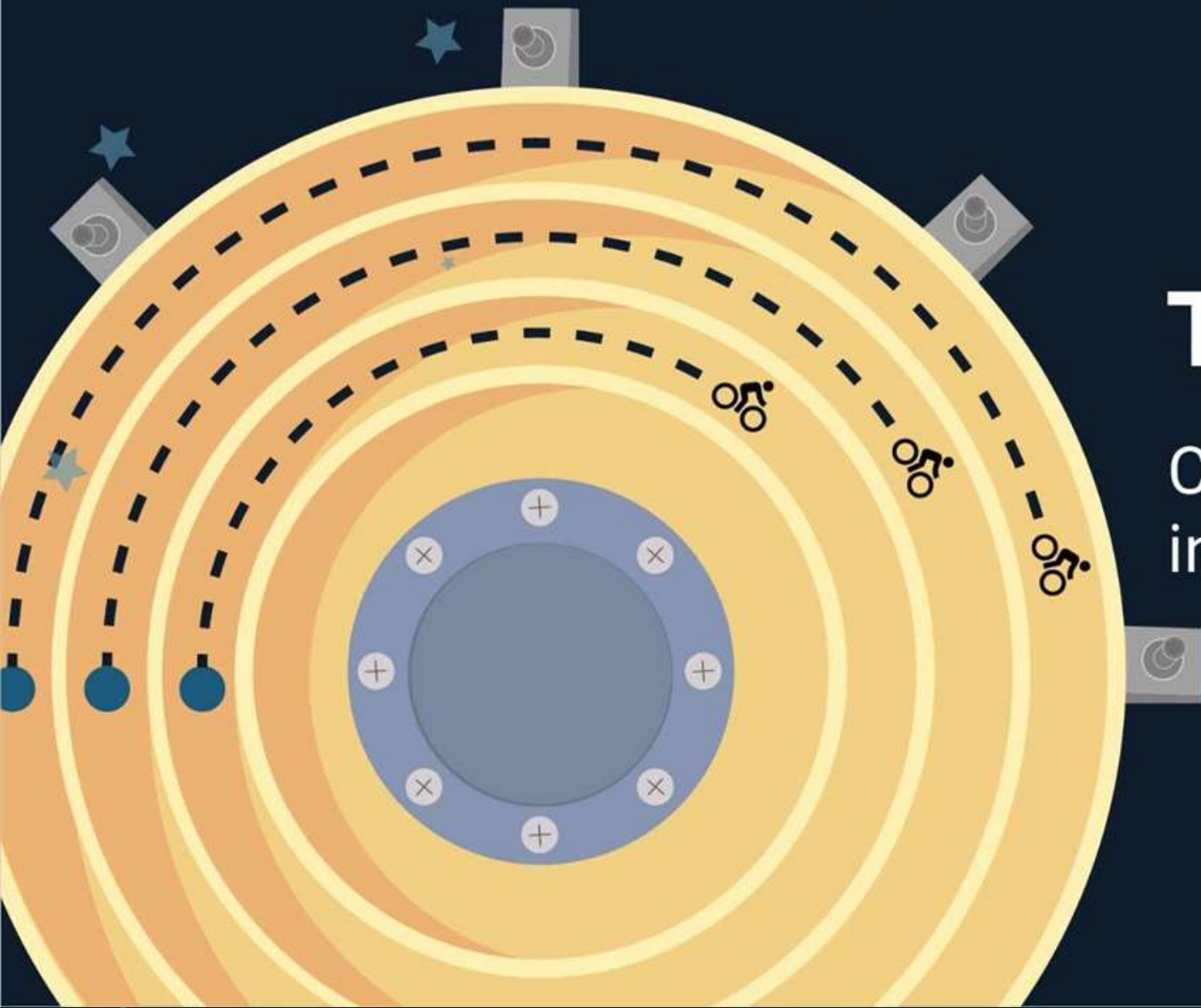
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IGS Events and Training Resources

Tour de l'IGS - Virtual Mini-Workshop Series

IGS Workshops - Resources from past workshops

Associate Member Open Meetings



Tour de l'IGS

Connect with the IGS community
in a series of mini-workshops



IGS INTERNATIONAL
GNSS SERVICE

IGS 2022 Virtual Workshop Presentations

Thank you to those who participated in the IGS 2022 Virtual Workshop! Please find the PDF presentation of each session below. Video links are marked by "(Video Only)." **Note:** Only Keynotes, SLM 2.0 Presentations, and Splinter Outbriefs were recorded. Workshop sessions were not recorded to allow for free discussion. If you have any questions, please contact the IGS Central Bureau (cb@igs.org)

[Sessions](#) [Recommendations](#) [Resources](#) [Videos](#) [Participants](#)

S01 – Infrastructure Committee (IC), Data Centers (DC) and RINEX Session

Presentation Title	Presenter(s)
Infrastructure Committee (IC), Data Centers (DC) and RINEX	M. Bradke, R. Ruddick, W. Söhne, B. P. Michael, I. Romero

S02 – Clock Product Session

Presentation Title	Presenter(s)
Clock Product Working Group (Coming Soon)	M. Coleman

S03 – Antenna Session

Presentation Title	Presenter(s)
Antenna Working Group	A. Villiger

S04 – Ionosphere Session

Presentation Title	Presenter(s)
Overview of the Ionosphere Working Group	A. Krankowski
UPC-IonSAT recent contributions to ionospheric modelling	M. Hernández-Pajares
Generation and Validation of the Second IGS combined Real-Time Global Ionospheric Maps	N. Wang
IGS ROTI maps. Current Status and its extension towards equatorial region and southern hemisphere	I. Cherniak
Towards cooperative global mapping of the ionosphere. Feasibility for IGS and ION with	



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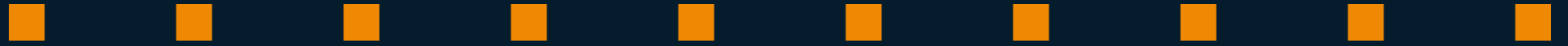
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IGS 2022 Virtual Workshop ▶ PLAY ALL

To learn more about the workshop, visit <https://igs.org/igs-ws-2022/> To view other workshop presentations, visit <https://igs.org/igs-ws-2022/presentations> (Note: Only keynotes, splinter...



IGS 2022 Virtual Workshop Keynote 1 - Chris Mattioli | IGS 2022 Virtual Workshop Keynote 2 - Dan Milner-Hopwood | IGS 2022 Virtual Workshop - IGS SiteLog Manager 2.0 | IGS 2022 Virtual Workshop Keynote 3 - Dan Hatch | IGS 2022 Virtual Workshop - Chris Mattioli (Outbriefs)



04

The IGS of the Future: 2021+ Strategic Plan

IGS Goals

Serving the community with **facilitation**, **coordination**, **incubation**, and **advocacy** in three strategic goals

GOAL **1** Achieve Multi-GNSS Technical Excellence










GOAL **2** Strengthen Outreach and Engagement

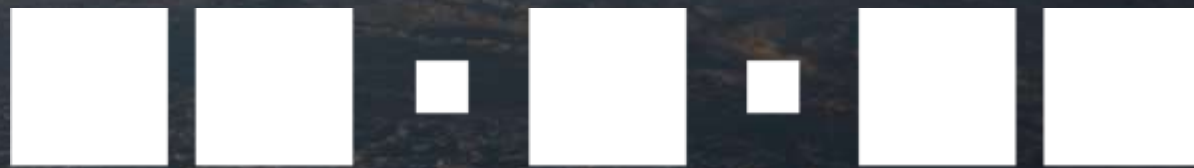


GOAL **3** Build Sustainability and Resilience



IGS Strategic Plan Matrix

		 Facilitation	 Coordination	 Incubation	 Advocacy
GOAL 1	 Multi-GNSS Technical Excellence	Identify impediments to multi-GNSS in each working group and infrastructural component, and facilitate solutions to these blockages	Coordinating (and tracking progress) the various multi-GNSS contributions (achievements) across all Working Groups and Infrastructural components	Identify and incubate aspects of IGS component work that are in need of special attention to make a strong step toward multi-GNSS	Advocate the benefit and critical need of Multi-GNSS through case studies, leadership, and demonstration
GOAL 2	 Outreach and Engagement	Facilitating collaborations with stakeholder organizations and groups to diversify and increase participation of IGS users and contributors	Coordinating outreach to relevant agencies & institutions, to attract and promote IGS scientific and user applications	Incubating the next generation of IGS community members through Inclusion campaigns targeted at organizations and early-career scientists	Advocating for standardization and interoperability essential to organizational sustainability and user community engagement
GOAL 3	 Sustainability and Resilience	Facilitating integration and evolution as both a collaborative research program and operational service	Coordinating technological and geographical infrastructural innovation and diversity	Incubating organizational sustainability and resilience through personnel redundancy and modularity	Advocating for open access geodetic and multi-GNSS data, products, and metadata via alignments with major United Nations frameworks and national/ regional agendas



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