



UN-GGIM:Americas

REGIONAL COMMITTEE OF UNITED NATIONS
ON GLOBAL GEOSPATIAL INFORMATION
MANAGEMENT FOR THE AMERICAS

Update to the UN Subcommittee on Geodesy 4th Plenary Session

Daniel Roman, Bureau Member to SCGeodesy / Chair, FIG Americas CDN

Sergio Cimbaro, Member IAC-UN-GGCE / Bureau Member SCGeodesy UN-GGIM

Gustavo Caubarrere, Chair, UN-GGIM: Americas WG GRFA/President, SIRGAS

Dana J Caccamise II, Rep., UN-GGIM ANA/US Rep., SIRGAS



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History of UN-GGIM: Americas

- Resolution No. 3 of the Sixth Regional Cartographic Conference of the United Nations for the Americas (UNRCC-Americas) 1997
- Established the Permanent Committee for Geospatial Data Infrastructure of the Americas (PC-GDIA)
- UN Secretariat report established UN-GGIM in 2011
- PC-GDIA became the UN-GGIM: Americas in 2014
- It was reorganized recently into four WG's – with the most recent being the Geodetic Reference Frame for the Americas (GRFA)



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Structure of UN-GGIM: Americas

Leadership

- President: **Sofía Nilo Crisóstomo**
- Vice-President: **Leonardo Scharth Loureiro**
- Executive Secretary: **Pamela Castillo**
- Board Members (Vocales)
 - **Gabriela García Seco**, North America
 - **Isis Tejada**, Central América
 - **Simone Lloyd**, Caribbean
 - **Marcelo Emery**, South America

Working Groups and Networks

- **Working Groups**
 - Integration of Statistical and Geospatial Information
 - Disasters
 - **Geodesy (GRFA)**
 - Integrated Geospatial Information Framework
 - Land Administration (in process of implementation)
- **Networks**
 - ANA - **Rosario Casanova**
 - Private Sector – **Valrie Grant**





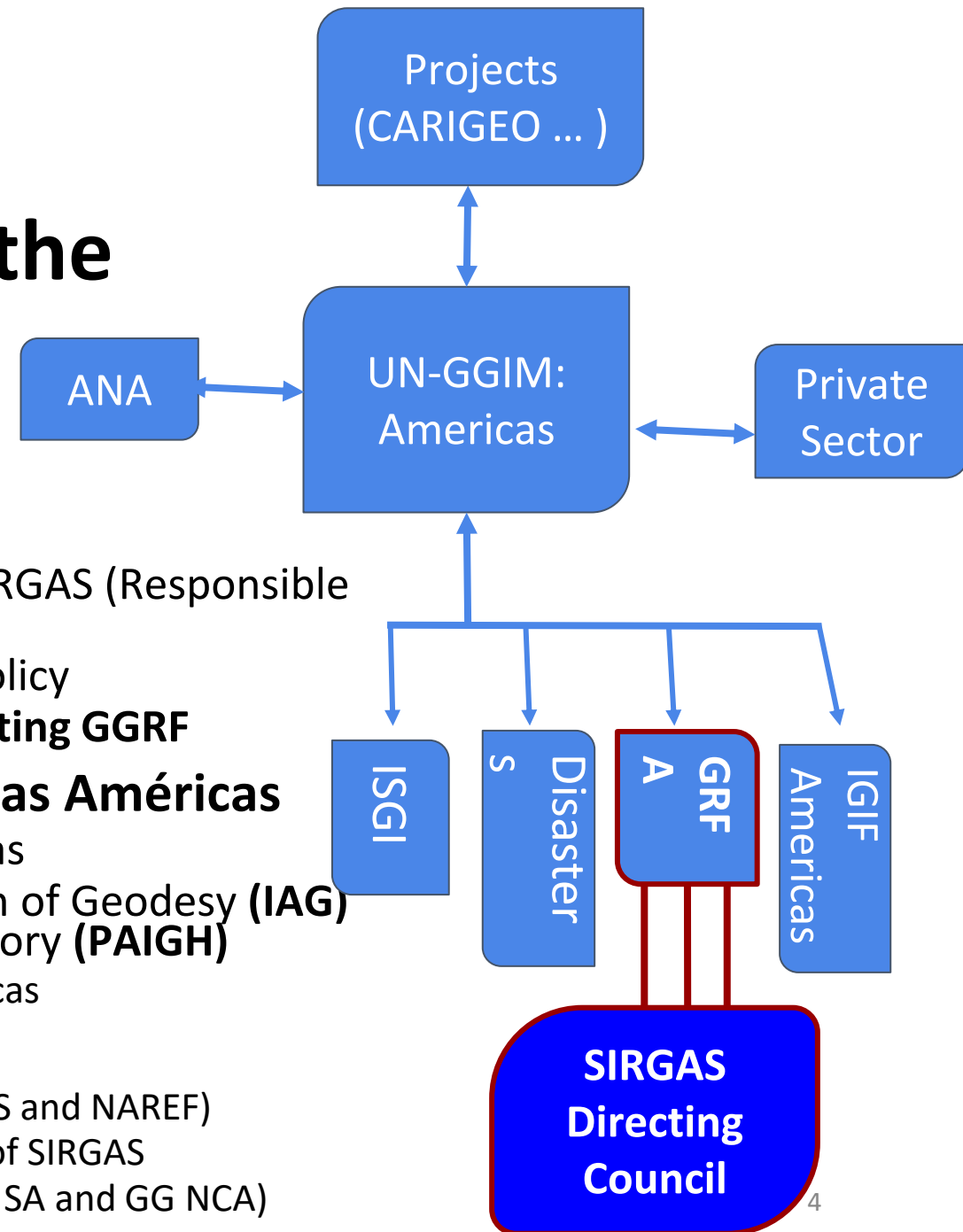
Geodetic Reference Frame for the Americas (GRFA)

• Working Group inside of UN-GGIM-Americas

- Implements the GGRF for the Americas
- Equivalent to the UN SCoG for the Americas
- **Membership is identical** to the Directing Council of SIRGAS (Responsible for Geodesy in member countries)
- This simplifies the connection between science and policy
- **Recent Resolution supported Americas Nations adopting GGRF**

• SIRGAS: Sistema de Referencia Geodésico para las Américas

- In English: Geodetic Reference System for the Americas
- **SIRGAS has roots in** both the International Association of Geodesy (**IAG**) and the Pan American Institute of Geography and History (**PAIGH**)
 - SIRGAS is IAG 1.3b but is separately an NGO for the Americas
- **Three WG's inside SIRGAS**
 - **WG1** – Reference System: combines IAG 1.3b, 1.3c (SIRGAS and NAREF)
 - **WG2** - SIRGAS at national level: National implementation of SIRGAS
 - **WG3** – Vertical Datum: combines IAG 2.4b and 2.4c (GG in SA and GG NCA)





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SIRGAS Structure



Directing Council (DC)

Executive
Committee (EC)

Scientific
Council (SC)

Working
Group I
(WG1)

Working
Group II
(WG2)

Working
Group III
(WG3)

IAG, PAIGH, reps from **22 member states**,
observers

EC - **Pres., VP**, WG Chairs

SC - DC votes on
members

WG1 - Geometric TRF

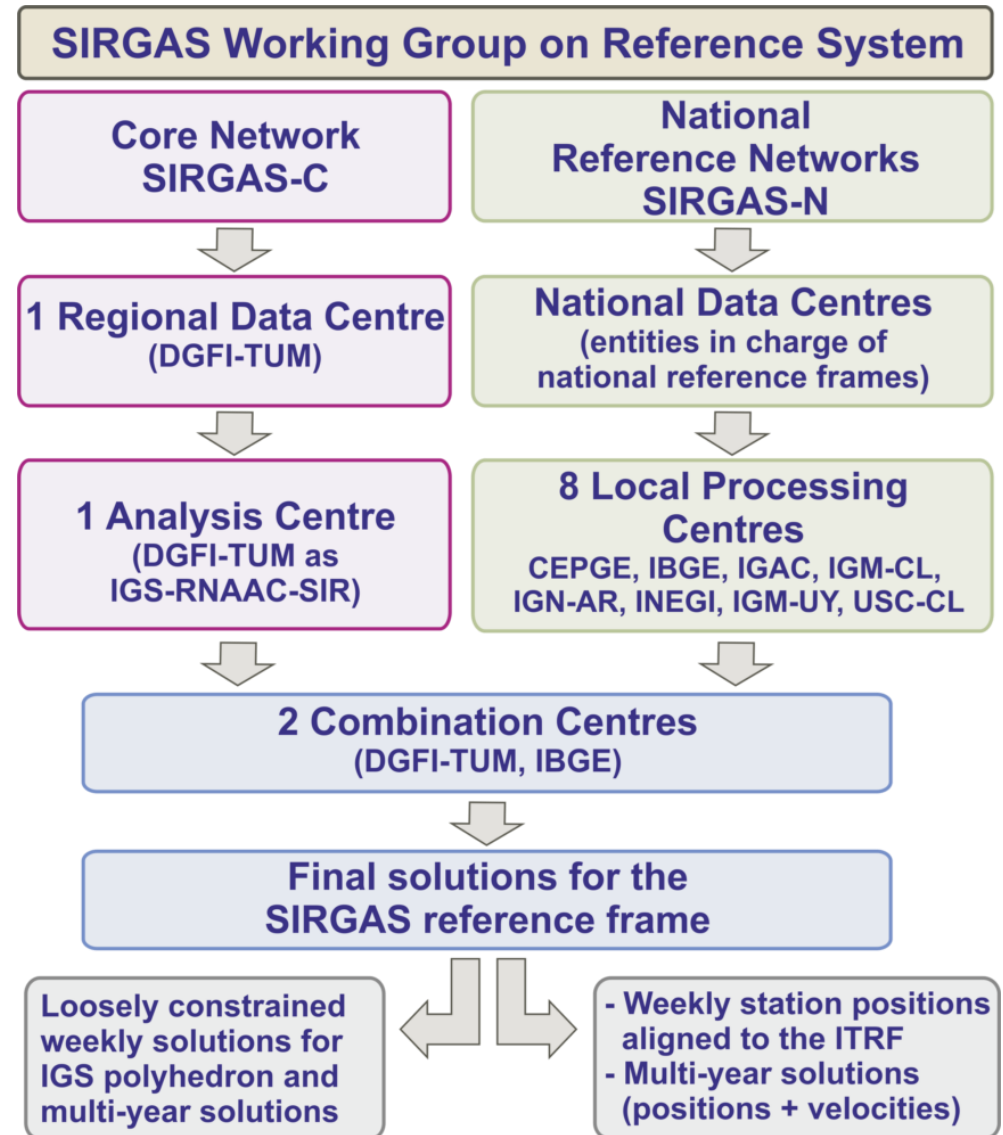
WG2 - National Networks⁵



SIRGAS WG 1

IAG 1.3b

- Regional Analysis Center of Associates of the IGS Network for SIRGAS (IGS, RNAAC, & SIRGAS)
- 11 SIRGAS Processing Centres (Local) in the Americas Nations
- One Analysis Centre dedicated to the Neutral Atmosphere
- Two SIRGAS Combination Centres
- VLBI Analysis Center of IVS
- SLR processing Center in progress



Since 2019-11






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SIRGAS WG 1 - cont

IAG 1.3c

- IGS Analysis Centers, six 
- Global Network Associate Analysis Centers, one 
- Regional Network Associate Analysis Centers, two 





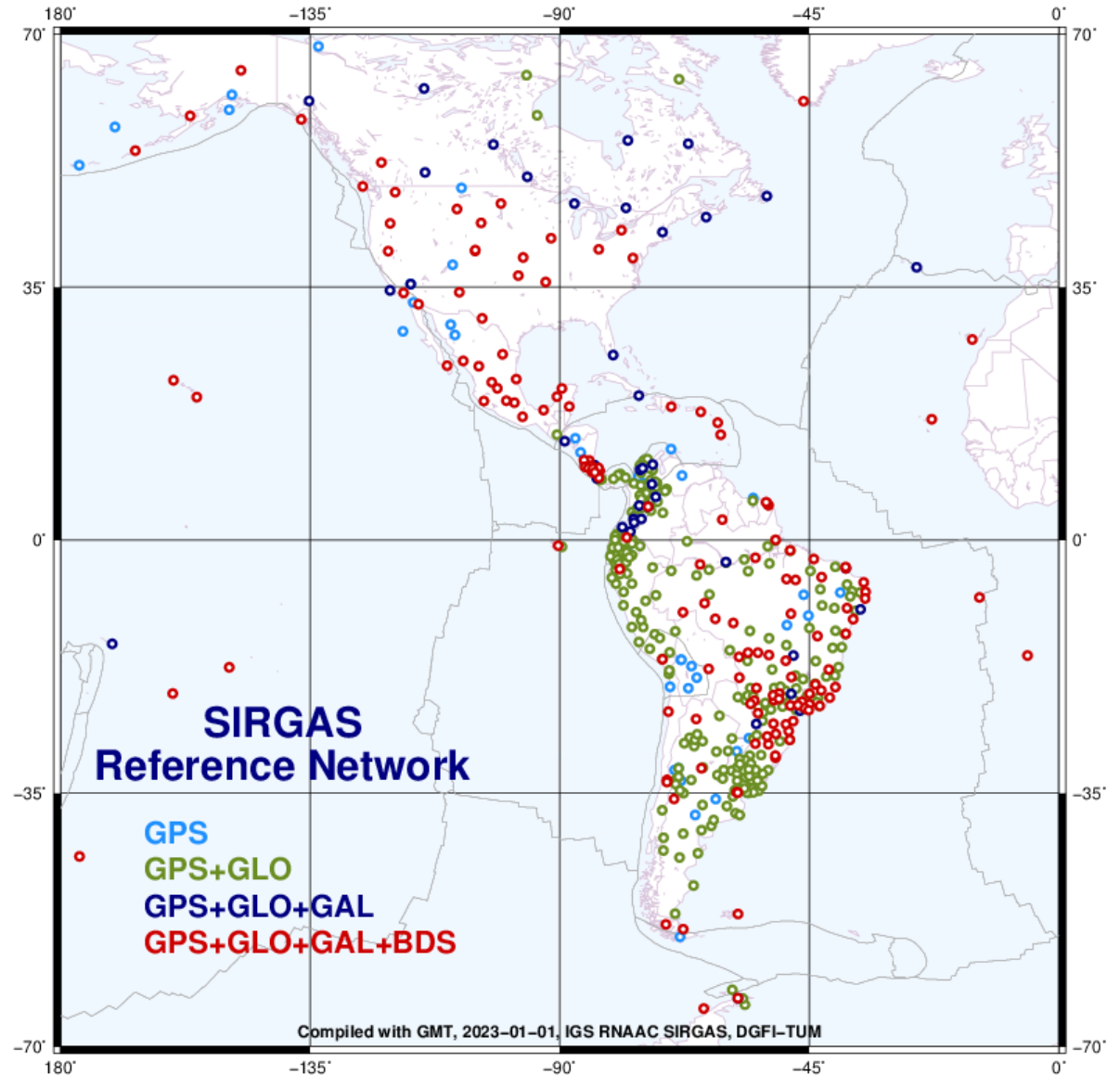
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SIRGAS WG 1

IAG 1.3b and IAG 1.3c

- SIRGAS Stations
- Multi-GNSS predominant
- Distribution is for SIRGAS-N (all stations now in SIRGAS)
- Future inclusion of some North America stations
- Training
 - *2023 - 8th SIRGAS School on Reference System – Heredia and San José, Costa Rica*
 - July 3 to 7, 2023, 55 assistants from Chile, Colombia, Costa Rica, Ecuador, Brazil, Mexico, Panama and Republica Dominicana.





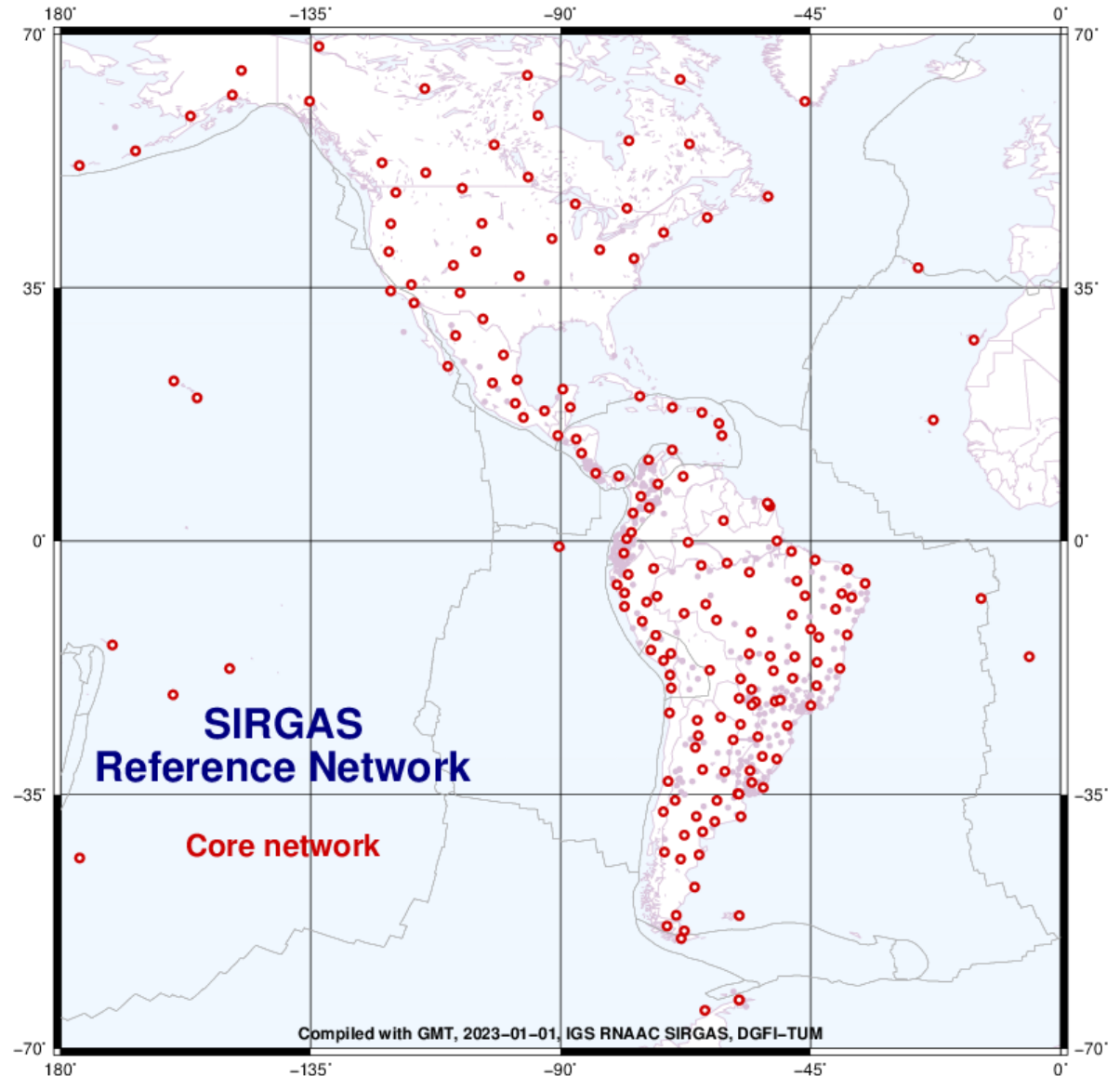
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SIRGAS WG 1 - cont

IAG 1.3b and IAG 1.3c

- SIRGAS-C core network
- **Primary densification of ITRF**
- Americas and the Caribbean
- Good continental coverage
- Stable site locations ensure long-term stability
- **Combines IAG 1.3b & 1.3c**
- **Select stations used in IGS solutions for ITRF**





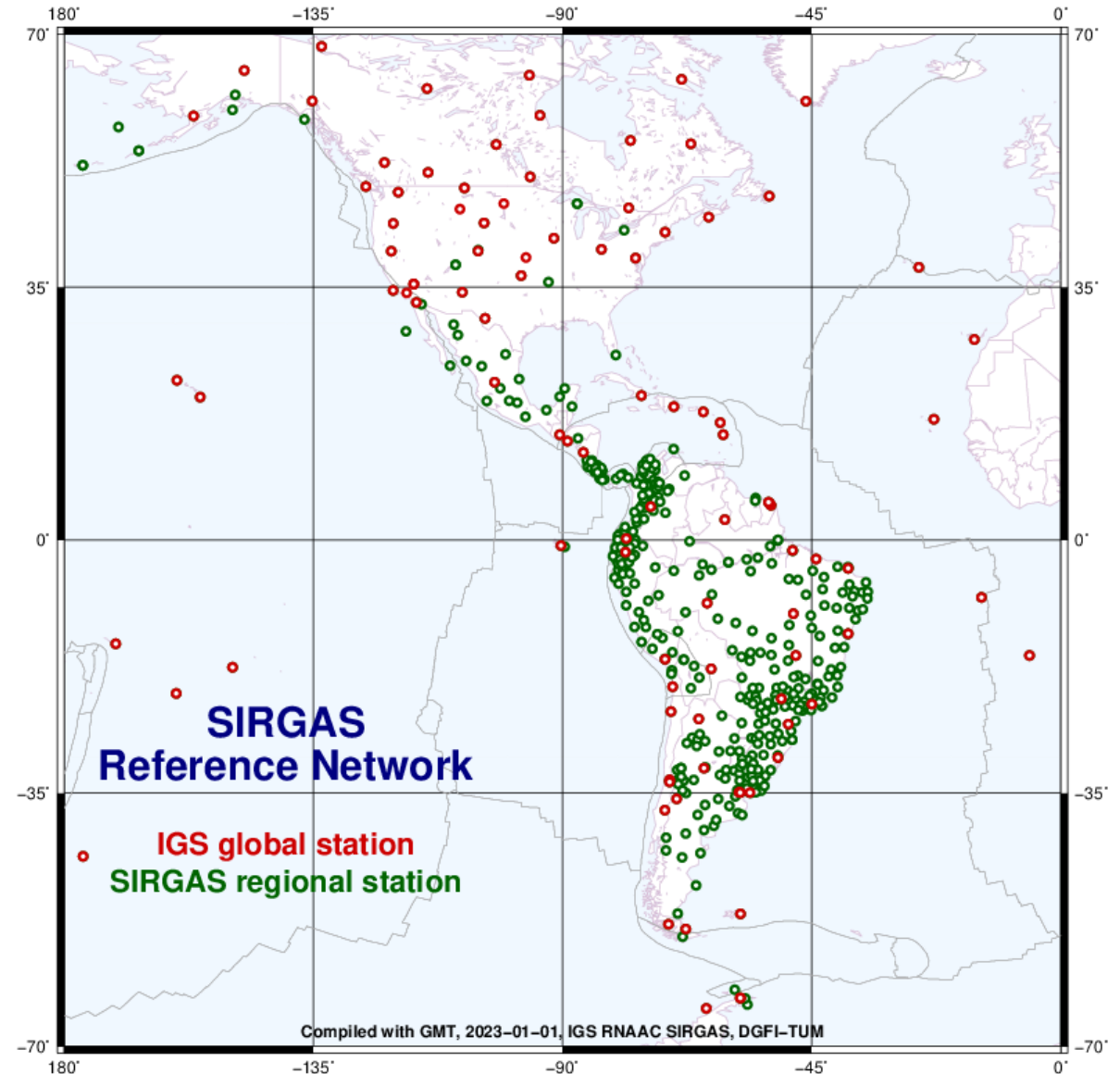
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SIRGAS WG 1 - cont

IAG 1.3b and IAG 1.3c

- SIRGAS-N - National reference network
- Improves the densification of the core network
- Provides national and local access to the reference frame
- Both, SIRGAS-C and SIRGAS-N satisfy the same characteristics and quality
- Each station is processed by three analysis centres.



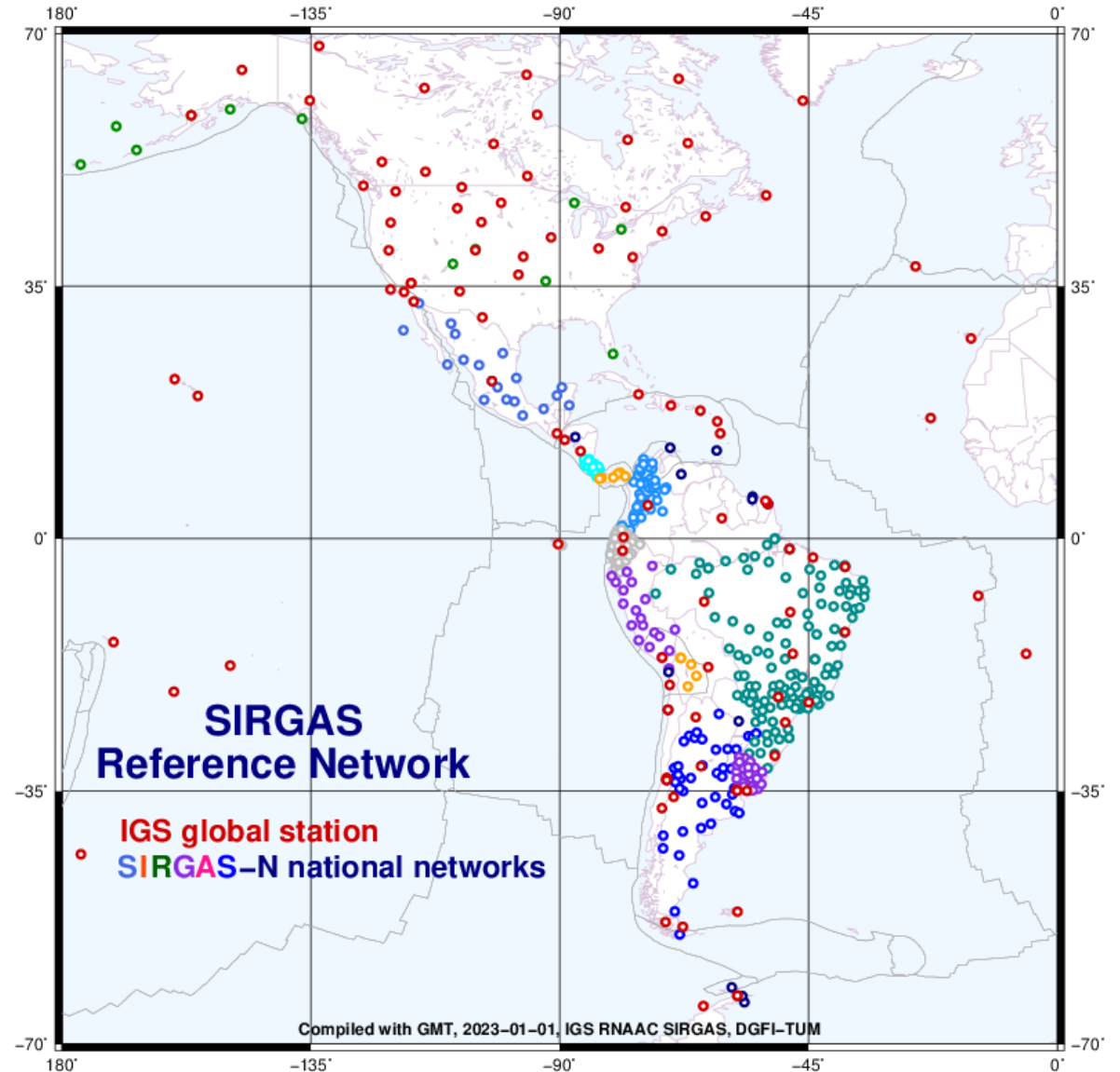


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SIRGAS WG 2

- . Almost all countries in the Americas are aligned with the GGRF.
- . We are working to incorporate all countries, particularly those in the Caribbean.





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SIRGAS WG 2

Technical guidelines

- Guidelines for the Coordination of the SIRGAS Continuously Operating Network (SIRGAS-CON)
- Guidelines for the installation, operation and registration of SIRGAS-CON stations
- Guidelines for SIRGAS Analysis Centers
- Guidelines for IHRF station selection
- Guidelines for performing gravimetric measurements around IHRF stations

Recommendations

- IGS site guidelines
- Monumentation of permanent GNSS stations ? UNAVCO
- Physical Site Specifications: Geodetic Site Monumentation (W.L. Combrinck and M. Schmidt)
- NOAA/NGS Guidelines for establishing and operating CORS



**GUIDE01 SIRGAS
COORDINA**



Ref.: Guide 02
Rev.: 1.0
Date: 01.12.2021

**GUIDE02 INSTALLATION,
OPERATION AND REGISTRATION OF
SIRGAS**



Ref.: Guide 03
Rev.: 3.0
Date: 01.12.2021

Revised: December 2021

**GUIDE03 PROCESSING GUIDELINES
FOR THE SIRGAS ANALYSIS CENTERS**



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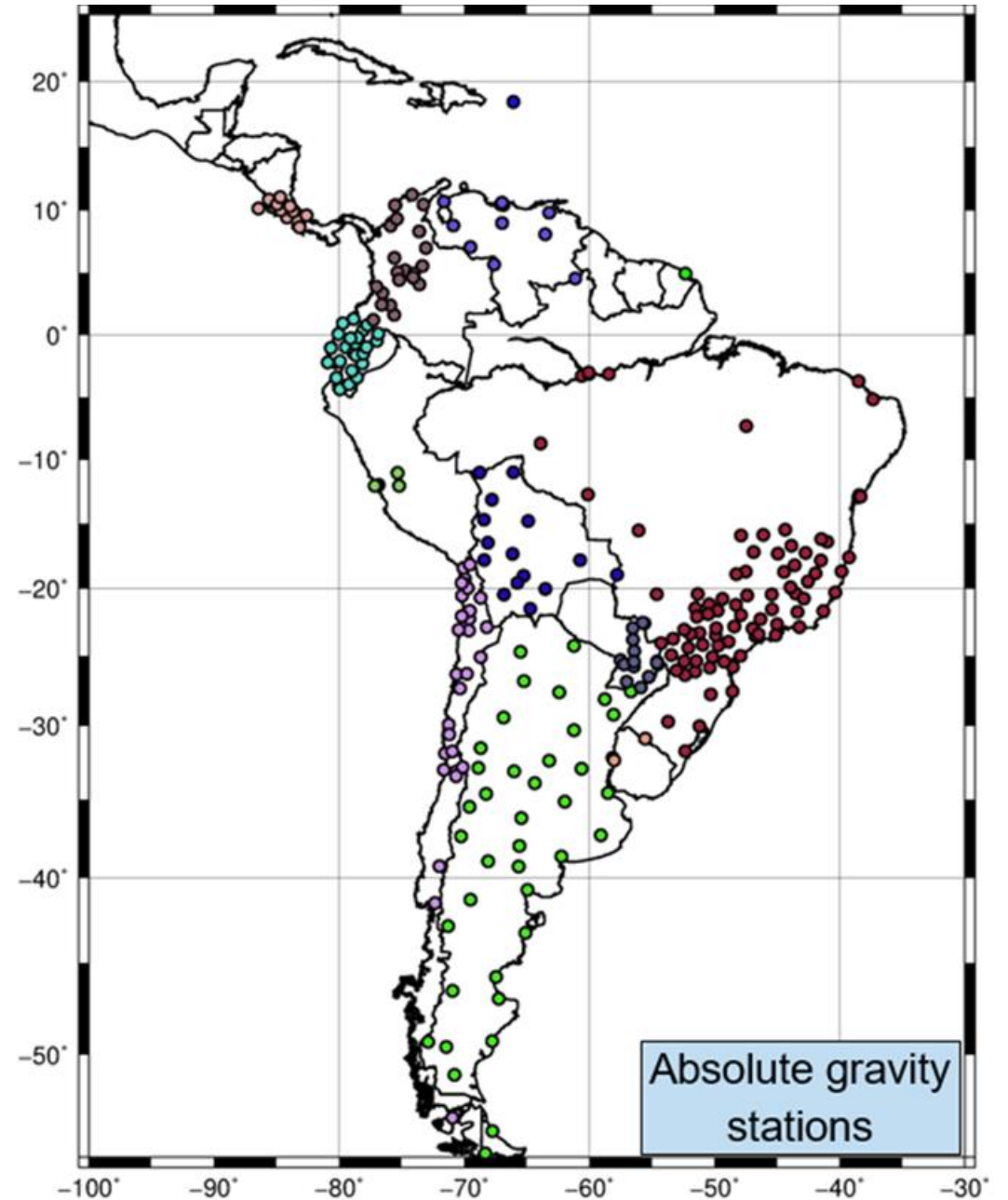
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SIRGAS WG 3

IAG 2.4b

SIRGAS works together with universities and geographic institutes to determine absolute gravity stations in the region.

SIRGAS encourages countries to keep data open and share gravity information in the AGrav (Absolute Gravity Database) repository of the International Gravity Field Service (IGFS) (agrav.bkg.bund.de).





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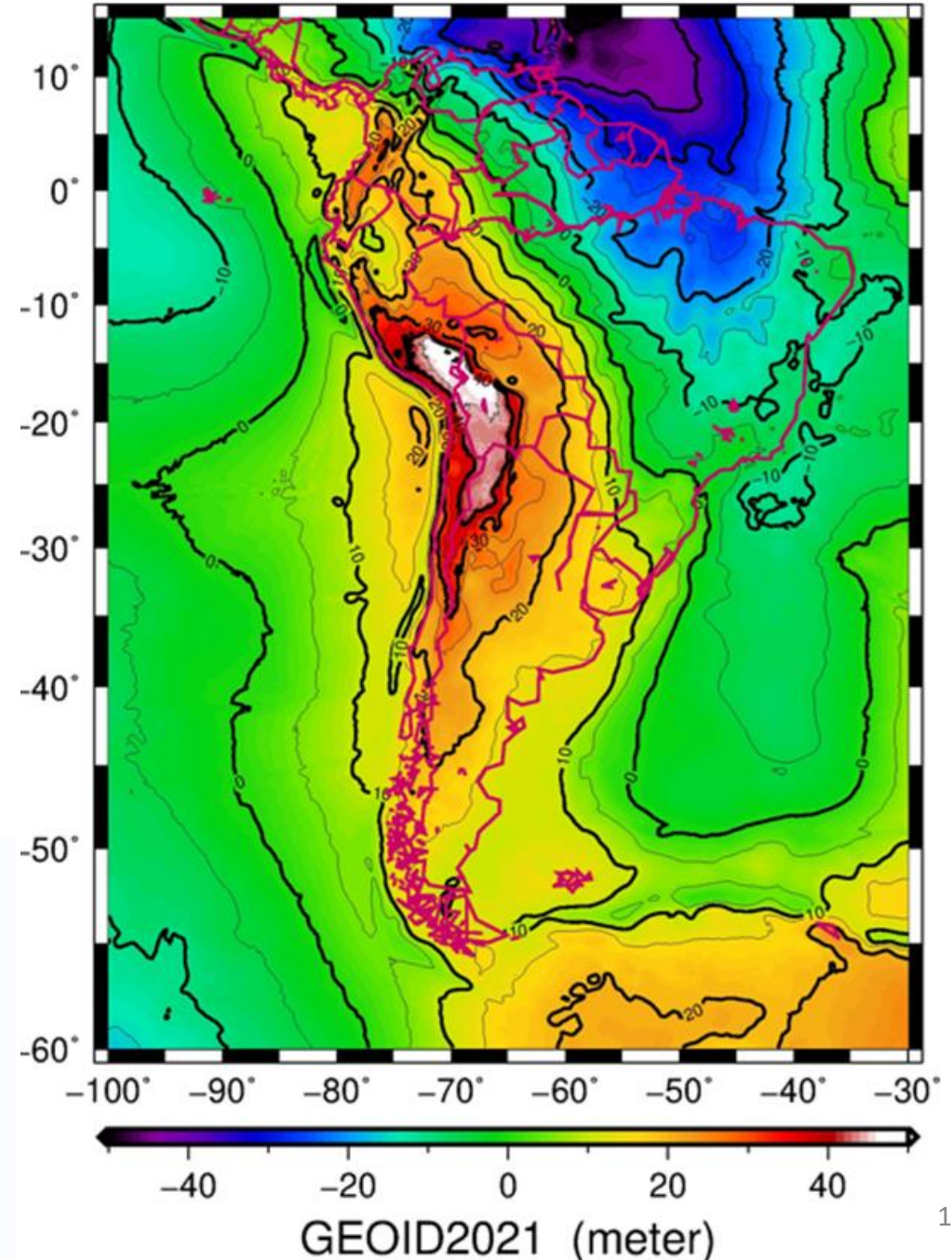
SIRGAS WG 3 - cont

IAG 2.4b

SIRGAS makes geoid models available for the South American community. The models are available for download on the International Geoid Service (ISG) page of the International Geodesy Association.

Regional Models by list for SOUTH AMERICA

Zone	Description	Year	Status
South America	Gravimetric Geoid	2010	PUBLIC
South America (GEOID2015)	Gravimetric Geoid	2015	PUBLIC
South America (GEOID2021/QGEOID2021)	Gravimetric Geoid and Quasi-Geoid	2021	PUBLIC



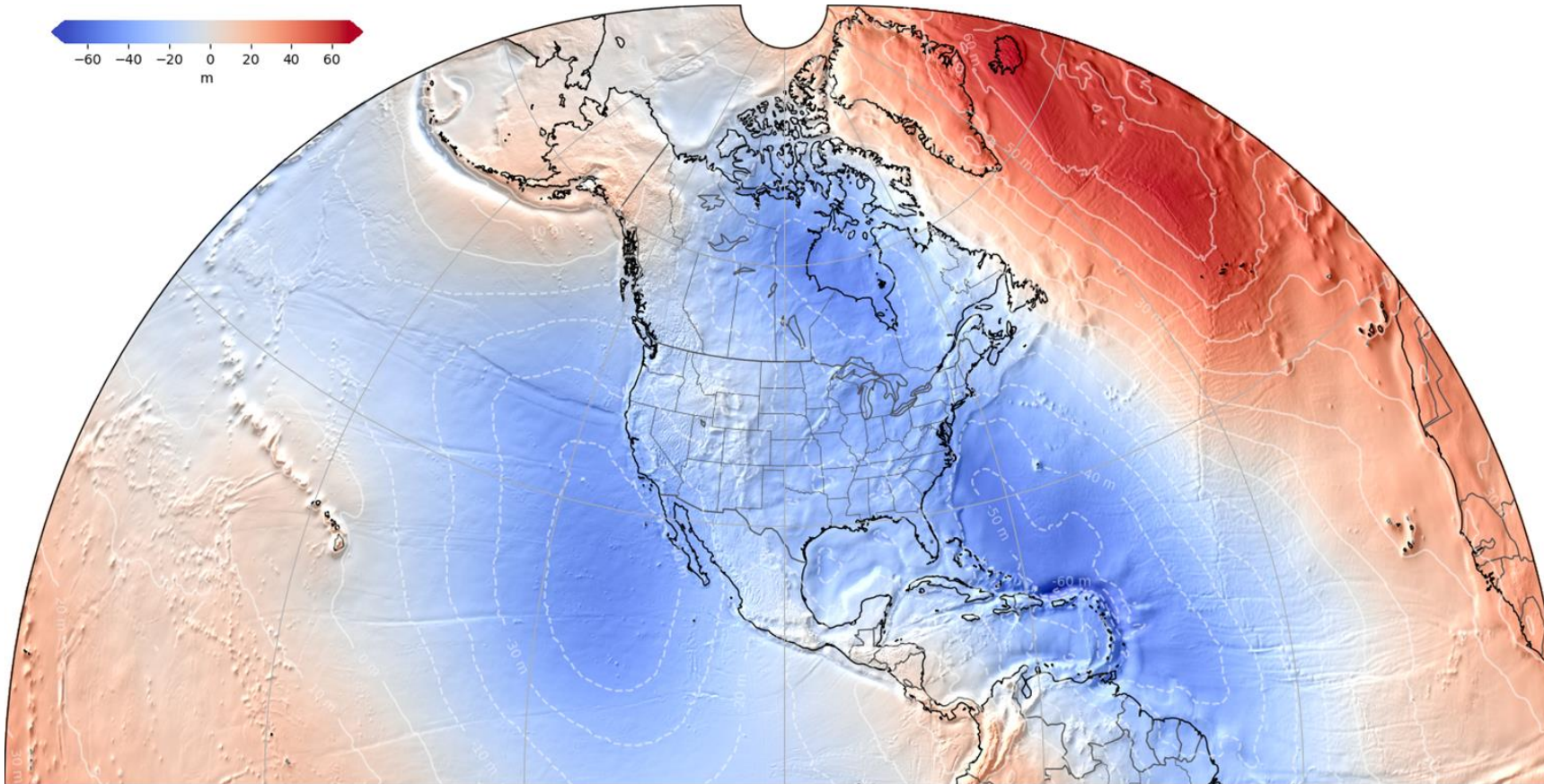
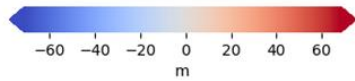


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SIRGAS WG3 - NAGPD2022 (Alpha)

IAG 2.4c



- **Joint US-Canada Geopotential Datum**
- **Use by Mexico**
- **¼ Earth Surface**
- **W_0 (IAU) = 62,636,856.0 m^2s^2**
- **Estimated from over 200 TBMs**



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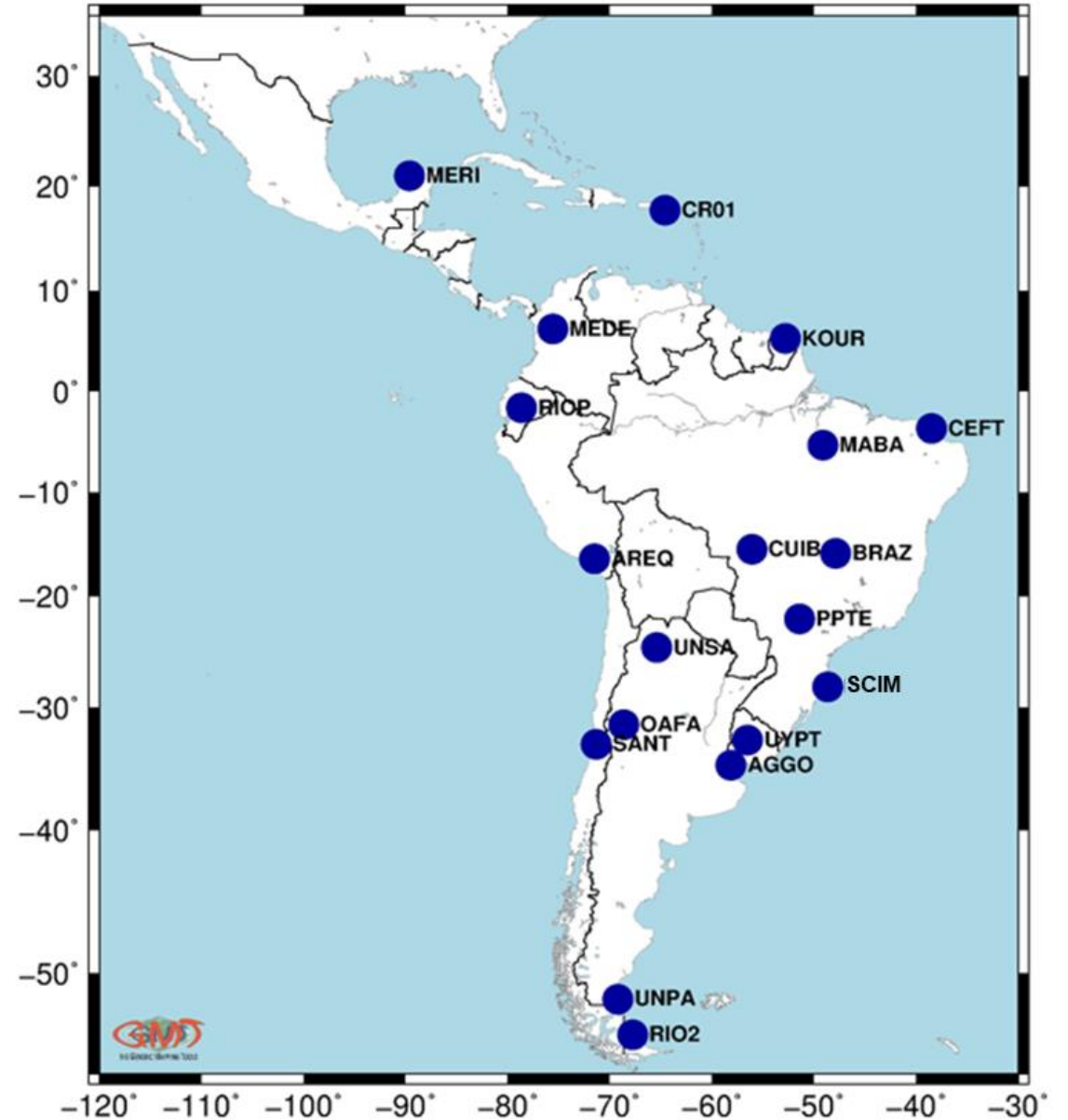
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SIRGAS WG 3 - cont

IAG 2.4b

SIRGAS is involved in the activities for the realization of the International Height Reference Frame. In Latin America 19 stations make up the global network.

The members of GT-III have collaborated in the calculation of gravity potential values for the stations in the region.





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SIRGAS WG 3 - Training activities

2022 - Workshop "Vertical Reference Systems" – Santiago, Chile

November 2 to 4. 14 assistants from 6 countries.

2023 - 14th International School on "The Determination and Use of the Geoid" – Buenos Aires, Argentina

November 13 to 17. The school was held in cooperation with the International Service for the Geoid from the International Association of Geodesy. 40 assistants from 14 countries.

2024 - SIRGAS Symposium

November TBD. To train scientists, professionals and technicians from national mapping agencies, universities and research centers in the most modern geodetic techniques linked to the geocentric, altimetric and gravimetric reference frameworks.





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Collaboration working groups

- Aguascalientes Declaration
- Capacity Development WG

Education/webinars

- As part of the activities of UN-GGIM: Americas
- Diffusion of other educational activities from partners

Geo-Ethics

- Include SDG in Academic Curr.
- Ethical use of Geospatial Data

Inventory of courses related to Geospatial Data

ACADEMIC NETWORK UN-GGIM: AMERICAS

ANA Executive Committee 2023 - 2027



ROSARIO CASANOVA
CHAIR



MACARENA PÉREZ
VICE CHAIR



RIGOBERTO MORENO
SECRETARY



Advisory Board 2023 - 2027



CHARLOTTE D. SMITH



DANA J. CACCAMISE



MIRIAM OLIVARES



AND
New representatives for each working group of UN-GGIM:
Americas

Translation documents IGIF

The overall ambition of the Translation Team (TT) is:

- to help promote the UN-IGIF documents widely in support of improved geospatial information management for sustainable development.
- to help foster the launch of as many language tracks as possible.

FRENCH TEAM

BELGIUM – Sandrine D’Hoedt
CANADA – Eric Loubier



Sandrine D’Hoedt



Eric Loubier

ARABIC TEAM

KINGDOM OF MOROCCO – Nabila Licer
KINGDOM OF SAUDI ARABIA - Mohammad Abdoh AlMabrook
UNITED ARAB EMIRATES - Mohamed Gheta



Nabila Licer



Mohammad AlMabrook

PORTUGUESE TEAM

BRAZIL – Rafael Lopes da Silva
MOZAMBIQUE – Odete Semiao



Rafael Lopes da Silva



TRANSLATION TEAM



Mikael Lilje



Sergio Cimbaro



Paul L. Riley



Rosario Casanova

SPANISH TEAM

ARGENTINA – Sergio Cimbaro
MEXICO – Gabriela García Secco



Sergio Cimbaro



Gabriela García Secco

SERBIAN TEAM

SERBIA – Ljiljana Živković



Ljiljana Živković

RUSSIAN TEAM

RUSSIA – Alexey Trifonov



GERMAN TEAM

GERMANY – Gwendolin Seidner



Gwendolin Seidner



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ECLAC



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Joint Action Plan: Outcomes of the Aguascalientes Declaration

Developed with Member States of regional organizations, such as the PAIGH, UN-GGIM: Americas, AmeriGEO, SICA, ECLAC, SIRGAS, RedCLARA and UNEP. Three founded working groups:

1. Capacity Development
2. Communication, Cooperation, and Coordination
3. Data, Information, and Knowledge Sharing



AmeriGEO



ECLAC



UN-GGIM:Américas



SIRGAS
sirgas.ipgh.org

- The intention of this renewed Joint Action Plan is to **improve coordination and dialogue among the Member States and relevant international organizations** to share experiences in the application of geospatial data to establish good practices and the adoption and use of technologies to support the decision-making process.
- Its objectives include promoting the **integration of geospatial data to formulate a comprehensive approach to solving national and regional issues and challenges.**



Americas Capacity Development: Outcomes of the Orlando Declaration



- FIG Council established the Americas CDN in August 2023
- Spans all of the Americas: Subregions for Caribbean, Latin America & North America
- To address concerns of all Nation States, territories and constituent countries
- Build capacity and capability outside of the government agencies in FIG constituents

News in 2023



FIG Council establishes new Regional Network

August 2023

A new FIG Regional Network has been born. This is the third FIG Regional Network and covers the entire Americas region.

The Regional Capacity Development Network originates from the **Africa Task Force 2009-2014** that delivered a clear direction for African member Associations to actively increase their presence in FIG. This resulted in the first Regional Network in Africa (ARN). The idea was to have a global network operationalised on a Regional basis. Initially, the CDN was expanded to include the Asia-Pacific region (AP-CDN).



The appointed Chair of the Network, Dan Roman US, presents the proposal for a new Regional Capacity Building Network in the Americas region for the General Assembly in Orlando, Florida, 1 June 2023.



- Establishing contact with existing subregional and regional organizations
- Find and engage with national professional societies
- Connect national professional societies with their respective governments
- Work within FIG to ensure action and activity throughout the Americas





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Summary

- **UN-GGIM: Americas is central IGO for Americas Geospatial Data**
 - GRFA WG implements the GGRF in the Americas
 - Makes recommendation to the Americas RC
 - GRFA membership is identical to SIRGAS DC
- **SIRGAS WG's all contribute to education, capacity building and training opportunities primarily in the Americas**
 - WG1 provides a regional densification of the ITRF2020 for the Americas
 - GRFA recommended resolution to adopt SIRGAS - approved October 2023
 - WG2 builds links to Member Nations Reference Systems
 - WG3 develop a regional geopotential model
- **ANA leverages academic contacts to for outreach and education**
- **FIG Americas CDN bridges gap between governments and private sector professional organizations**



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¡Gracias!
Thank you!

<https://sirgas.ipgh.org/>

<https://geo.cepal.org/en/inicio.html>

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