

# Séptima Sesión UN-GGIM: Américas

Seventh Session  
UN-GGIM: Americas



**UN-GGIM: Américas**

COMITÉ REGIONAL DE LAS  
NACIONES UNIDAS SOBRE  
LA GESTIÓN GLOBAL  
DE INFORMACIÓN GEOESPACIAL  
PARA LAS AMÉRICAS

# Outline

- **Introduction**
- **Steps forward**
- **GRFA Working Group Terms of Reference**
- **GGRF Roadmap**
- **GRFA Working Plan**



# Introduction

United Nations General Assembly Resolution “Global Geodetic Reference Frame for Sustainable Development”, 26 February 2015 ( A / RES / 69 / 266 )



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# Introduction (cont.)

## United Nations General Assembly Resolution “Global Geodetic Reference Frame for Sustainable Development”, 26 February 2015 ( A / RES / 69 / 266 )

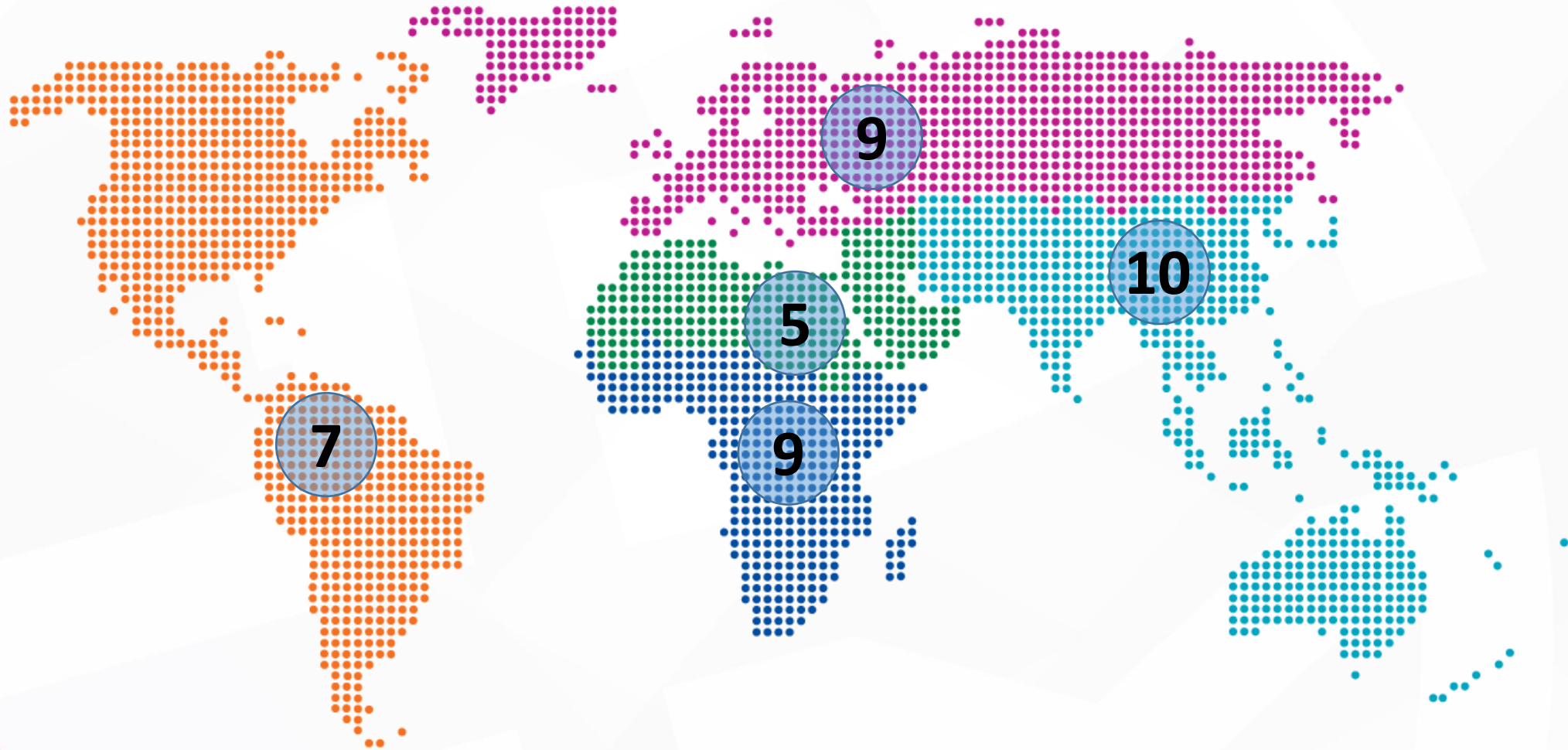
- Recognizes “the economic and scientific importance of and the growing demand for **an accurate and stable global geodetic reference frame for the Earth** that allows the interrelationship of measurements taken anywhere on the Earth and in space, combining geometric positioning and gravity field-related observations, **as the basis and reference in location and height for geospatial information**, which is used in many Earth science and societal applications, including **sea -level and climate change monitoring, natural hazard and disaster management and a whole series of industrial applications** (including **mining, agriculture, transport, navigation and construction**) in which precise positioning introduces efficiencies”.
- Notes “with appreciation the **establishment of a working group** by the Committee of Experts on Global Geospatial Information Management **to develop a global geodetic road map that addresses key elements relating to the development and sustainability** of the global geodetic reference frame”.





# Introduction (cont.)

UN Subcommittee of Geodesy Members = 40



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# Introduction (cont.)

**SCoG – UN-GGIM: Americas = 7 members + 3 observers**

| Country    | Agency  | Position                                  | Name                          |
|------------|---|---|-------------------------------|
| Argentina  | Instituto Geográfico Nacional                   | Director Nacional de Serv. Geog.          | Diego Piñón                   |
| Canada     | Canadian Geodetic Survey (NRC)                  | Director and Chief Geodesist              | Calvin Klatt                  |
| Costa Rica | Instituto Geográfico Nacional                   | Jefe del Depto. de Geodinámica            | Álvaro Álvarez Calderón       |
| Jamaica    | National Land Agency                            | Chief Geodesist                           | Nolan Aikens                  |
| México     | Instituto Nacional de Estadística y Geografía   | Director del Marco Geodésico              | Francisco Javier Medina Parra |
| USA        | National Geodetic Survey (NOAA)                 | Chief Geodesist                           | Daniel Roman                  |
| Uruguay    | Instituto Geográfico Militar                    | Jefe de la División Geodesia y Topografía | Gustavo Caubarrère            |
| Brasil (o) | Instituto Brasileiro de Geografia e Estatística | Coordenação de Geodésia                   | Sonia María Alves Costa       |
| Chile (o)  | Instituto Geográfico Militar                    | Director del IGM                          | Eduardo Cayul Aristondo       |
| SIRGAS (o) | SIRGAS  | Presidente de SIRGAS                      | Sonia María Alves Costa       |



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# Introduction (cont.)

## SCoG – UN-GGIM: Americas

| UN-GGIM-AP   | UN-GGIM-Europe                                | UN-GGIM-Arab St.  | UN-GGIM_Africa   | UN-GGIM-Americas   |
|--|---|---|--|--|
| <b>1. Geodetic Reference Frame</b>                   | 1. Core Data                                  | 1. Institutional Arrangements, Legal and Policy Issues, Awareness and Capacity Building | <b>1. African Geodetic Reference Frame</b>               | 1. The Integration of Statistical and Geospatial Information |
| 2. Cadastre and Land Management                      | 2. Data Integration                           | 2. Fundamental Data and Geo-Standards   | 2. Fundamental Datasets and Standards                    | 2. Disasters   |
| 3. Integrating Geospatial Information and Statistics | <b>3. Geodetic Reference Frame for Europe</b> | <b>3. Geodetic Reference Frame</b>  | 3. Institutional Arrangements and Legal Frameworks       | 3. Geospatial Data Infrastructure                            |
|  |   | 4. Integration of Geospatial & Statistical Information                                  | 4. Capacity and Capability Development                   | <b>4. Geodetic Reference Frame for the Americas</b>          |
|  |   |   | 5. Integration of Geospatial and Statistical Information |  |



# Introduction (cont.)

## Resolution 5/2019 – Sixth Session of UN-GGIM: Americas

- **Acknowledge the discussions held in September 2019 in Argentina** and the work being done **to reach a consensus on a proposal to establish a fourth working group**, to support the implementation of the resolution of the United Nations General Assembly “The global geodetic reference framework for sustainable development” in the Americas.
- **Support the proposal to create a task group, composed of the Executive Committee of SIRGAS**, delegates of the Americas in the Geodesy subcommittee of UN-GGIM and interested Member States, **to define the Terms of Reference of the proposed working group**, in awaits further consideration at the next SIRGAS meeting.





# Steps forward

## Actions

### 1. The task team was integrated with:

- **7 Subcommittee of Geodesy (SCoG) for the Americas members** (i.e. Argentina, Canada, Costa Rica, Jamaica, Mexico, United States of America and Uruguay) (*November*)
- **1 SCoG for the Americas observer** (Brazil - *November*)
- **2 representatives from Member States** (i.e. Sint Maartin -*February-* y Venezuela -*December-*)

### 2. Existing documentation related to the ToR was shared and read (*November-December*)

- The UN-GGIM SCoG ToR
- The United Nations General Assembly resolution “The global geodetic reference frame for sustainable development”
- The GGRF Road Map
- The GGRF Road Map Implementation Plan
- The ToR of the other Americas' WGs, so that we can use as a basis
- The SIRGAS statute
- UN-GGIM: Asia Pacific GRF strategic plan

### 3. A ToR proposal was sent to the members of the task team the 10<sup>th</sup> December



# Steps forward (cont.)

## Actions (cont.)

4. **Seven (7) rounds of reviews** of the ToR were conducted within the **task team** (*December - June*)
5. **A prelaminary version** was sent to the **UN-GGIM: Americas** delegates and to the **SIRGAS** Directing Council (*June - July*)
6. **Two (2) rounds of reviews** were conducted at **SIRGAS** (*July*)
7. **One (1) final round of reviews** was conducted at **UN-GGIM: Americas** (*August*)
8. **The final GRFA ToR** was sent to **UN-GGIM: Americas** delegates on 04 September for its consideration



# GRFA WG ToR

## General Objectives

- 1.1.1. To support the Nations of the Americas in response to the **United Nations General Assembly Resolution entitled “A Global Geodetic Reference Frame for Sustainable Development” (A/RES/69/266)** under the recommendations of the United Nations Global Geospatial Information Management (UN-GGIM) Subcommittee on Geodesy (UN-GGIM SCoG), and the scientific guidelines issued by the International Association of Geodesy (IAG) and Geocentric Reference System for the Americas (SIRGAS).
- 1.1.2. To **coordinate and assist Member States’ efforts to ensure the sustainability and enhancement of the GRFA**, as a crucial enabler of spatial data interoperability, disaster risk mitigation, and sustainable development.
- 1.1.3. The Working Group will be called the **Geodetic Reference Frame for the Americas (GRFA) Working Group** of the Regional Committee of United Nations on Global Geospatial Information Management for the Americas (UN-GGIM: Americas) and abbreviated to only GRFA Working Group.



# GRFA WG ToR (cont.)

## Specific Objectives

- 1.2.1. To assist and recommend to the Nations of the Americas **appropriate governance structures for implementing the GRFA.**
- 1.2.2. To support and recommend to the Nations of the Americas **proper standards and guidelines for implementing the GRFA.**
- 1.2.3. To encourage cooperation among the Nations of the Americas to **address infrastructure gaps and avoid duplications of efforts towards the development of a more sustainable GRFA.**
- 1.2.4. To **promote and provide mechanisms for capacity development and knowledge transfer in the field of geodesy** among the Nations of the Americas through supporting technical workshops and symposiums organized by SIRGAS and other institutions.
- 1.2.5. To **make the global and Pan-American geodetic reference frames more visible and understandable to society.**



# GRFA WG ToR (cont.)

## Specific Objectives (cont.)

- 1.2.6. To **serve as a conduit between the representatives of UN-GGIM SCoG and Geodetic Reference Frame Working Groups** from the other UN-GGIM Regions
- 1.2.7. To **serve as a collective of subject matter experts** for the broader UN-GGIM: Americas regional committee on all geodetic matters. Recommend representatives of the Americas to serve the UN-GGIM SCoG.
- 1.2.8. To **coordinate and assist the scientific efforts of SIRGAS and other American institutions** in the implementation of many of the above specific objectives.
- 1.2.9. To **promote that SIRGAS generates new strategic partnerships in the scientific field to ensure that the GRFA is accessible for implementation in all regions of the Americas**, including Nations that are not active members of SIRGAS.





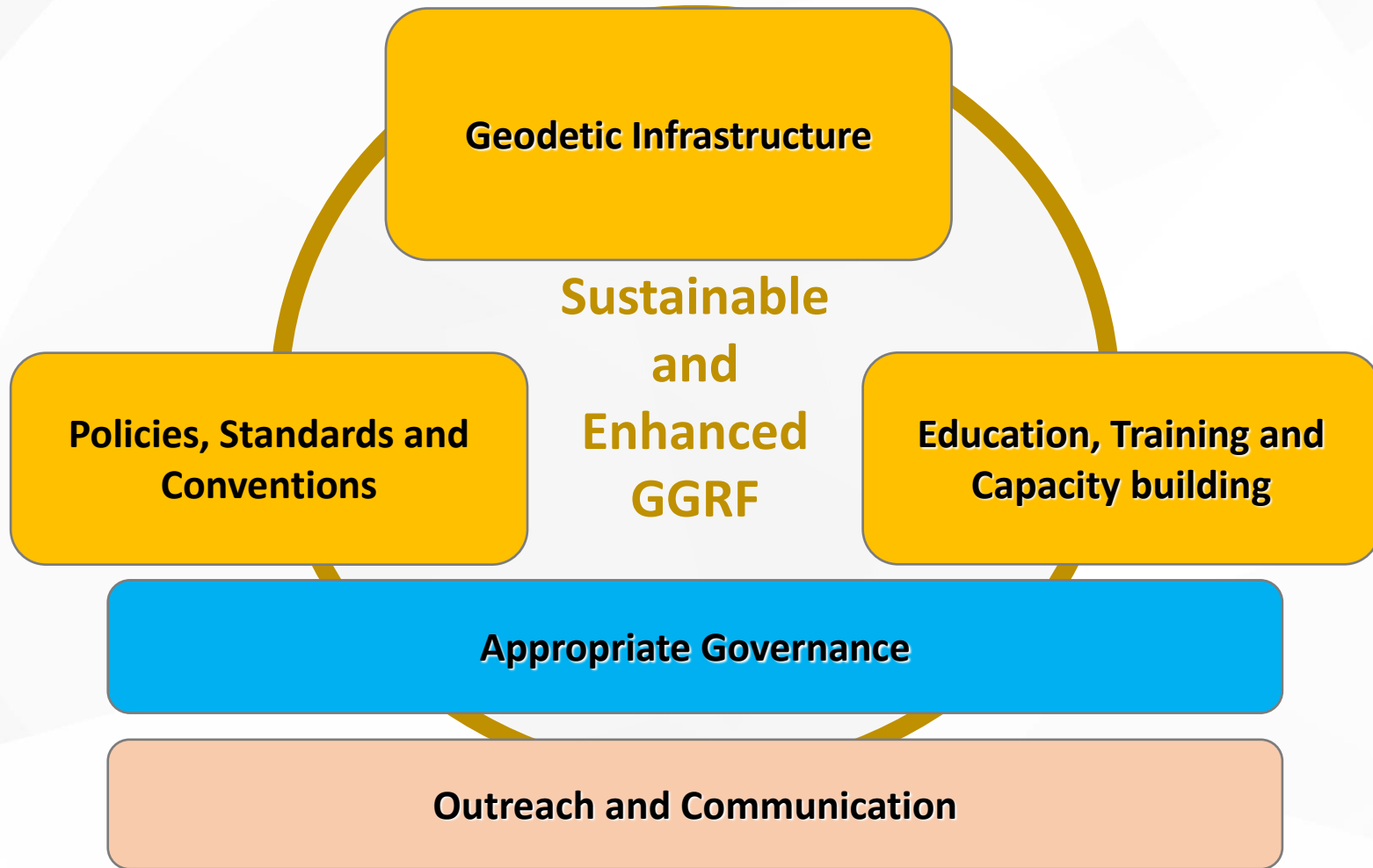
# GRFA WG ToR (cont.)

## Composition

- **Members**
  - **Membership is open to all the Member States of the Americas** . They may designate national delegates (representatives) and alternates to participate in the GRFA Working Group.
- **Observers**
  - **Observers may be invited to meetings and contribute to the GRFA Working Group**, including from other institutions, professional, research, and academic organizations or associations interested in geodetic programs.
- **Co-Chair**
  - **SIRGAS' President and Vice-president will serve as co-Chairs** of the GRFA Working Group.



# GGRF Roadmap



- **Geodetic infrastructure:** A more homogeneous distribution of geodetic infrastructure is needed to develop and utilize an accurate GGRF.
- **Standards:** Development of geodetic standards and open geodetic data sharing are required to enhance and develop the GGRF.
- **Education and capacity building:** Appropriate geodetic skills and educational programs are essential for the development, sustainability and utilization of the GGRF.
- **Governance:** The development and sustainability of the global geodetic reference frame is reliant on an improved governance structure.
- **Communication and outreach:** It is imperative to develop communication and outreach programs that enable the global geodetic reference frame to be more visible and understandable to society.



# GRFA WG Working Plan

| Objectives   | Goals  | Supplies  | Deliverables   | Due date     |
|--|--|---|--|--------------|
| <b>1. Improve the governance structure to develop and sustain the geodetic reference frame of the Americas</b> | To support the countries of the Americas to respond to the General Assembly Resolution on a Global Geodetic Reference Frame (GGRF) for Sustainable Development | <ul style="list-style-type: none"><li>- The United Nations General Assembly Resolution A/RES/69/266</li><li>- The GGRF Road Map</li><li>- The GGRF Road Map Implementation Plan</li><li>- The UN-GGIM Subcommittee of Geodesy (SCoG) ToR</li><li>- The GRFA ToR</li><li>- Statute of SIRGAS</li></ul> | <ul style="list-style-type: none"><li>- Resolutions of the GRFA working group to develop and sustain the geodetic reference frame of the Americas</li><li>- Participation of a greater number of Member States in the GRFA working group and in SIRGAS</li></ul> | October 2021 |



# GRFA WG Working Plan (cont.)

| Objectives  | Goals  | Supplies   | Deliverables                              | Due date     |
|---|--|--|---|--------------|
| 2. Strengthen the geodetic capacities of professionals and technicians responsible for maintaining national geodetic reference frames | To promote and collaborate with the development of technical documentation for GNSS data centers, GNSS analysis centers, and adoption of the SIRGAS reference frame  | Documentation developed by SIRGAS and by other international and regional geodesy organizations  | Technical documentation for Member States | October 2021 |
|   | To coordinate the development of the course "Determination of precise geodetic reference frames, using the scientific processing software GPS / GNSS GAMIT / GLOB-K" | <ul style="list-style-type: none"> <li>- Successful experience acquired and documentation developed for the course given in 2018 in Buenos Aires</li> <li>- International geodetic standards promoted by the IAG and SIRGAS</li> </ul> | Course                                    | June 2021    |



# GRFA WG Working Plan (cont.)

| Objectives  | Goals  | Supplies   | Deliverables | Due date     |
|---|--|--|--------------|--------------|
| 2. Strengthen the geodetic capacities of professionals and technicians responsible for maintaining national geodetic reference frames | To coordinate the development of the workshop "Vertical Reference Systems"   | <ul style="list-style-type: none"> <li>- Successful experience acquired and documentations developed in previous courses</li> <li>- International geodetic standards promoted by the IAG and SIRGAS</li> </ul> | Workshop     | July 2021    |
|   | To coordinate the development of the Workshop "GNSS Geodetic Infrastructure" | <ul style="list-style-type: none"> <li>- UNAVCO documentation</li> <li>- International geodetic standards promoted by the IAG and SIRGAS</li> </ul>  | Workshop     | October 2021 |





# GRFA WG Working Plan (cont.)

| Objectives   | Goals   | Supplies   | Deliverables   | Due date       |
|--|---|--|--|----------------|
| <b>3. Promote the open exchange of geodetic data to improve and develop the geodetic reference frame of the Americas</b> | To promote the opening of the geodetic data repositories of the Member States | <ul style="list-style-type: none"><li>- The United Nations General Assembly Resolution A/RES/69/266</li><li>- The GGRF Road Map</li><li>- The GGRF Road Map Implementation Plan</li><li>- The GRFA ToR</li><li>- Statute of SIRGAS</li></ul> | Recommendation for Member States to open their geodetic repositories | September 2021 |



# GRFA WG Working Plan (cont.)

| Objectives  | Goals   | Supplies  | Deliverables   | Due date     |
|---|---|---|--|--------------|
| 4. Define and maintain the geodetic reference frame of the Americas | To development an analysis on the state of the art of reference frames and geodetic capacities build in the Member States | - Survey<br>- International standards promoted by IAG, SIRGAS and SCoG of UN-GGIM | Necessary actions to strengthen the geodetic reference frames of the Member States, following the international geodetic standards | June 2021    |
|   | To coordinate with Member States the development of three new GNSS Analysis Centers                                       | Existing human, computing and geodetic capabilities                               | SIRGAS-CON network expansion to North America  | October 2021 |



# GRFA WG Working Plan (cont.)

| Objectives   | Goals  | Supplies  | Deliverables  | Due date                    |
|--|--|---|---|-----------------------------|
| <b>5. Develop communication and outreach programs that allow the geodetic reference frame to be more visible and understandable to society</b> | To disseminate the activities carried out by GRFA, SIRGAS, UN-GGIM: Americas and other regional and international geodetic updates | SIRGAS Facebook, Twitter, LinkedIn and YouTube channels | Weekly publications and posts on the official SIRGAS channels   | October 2020 - October 2021 |
|  | To develop webinars for disseminating geodetic activities carried out in the Americas  |   | At least 6 webinars from agencies in the Americas responsible for establishing national geodetic reference frames | January- October 2021       |



Better  
together

Better  
together  
and  
integrated

Better  
together  
and  
integrated  
and using  
the same  
Reference  
Frame



**Thank you**  
for your attention



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