

GGOS Bureau of Products and Standards

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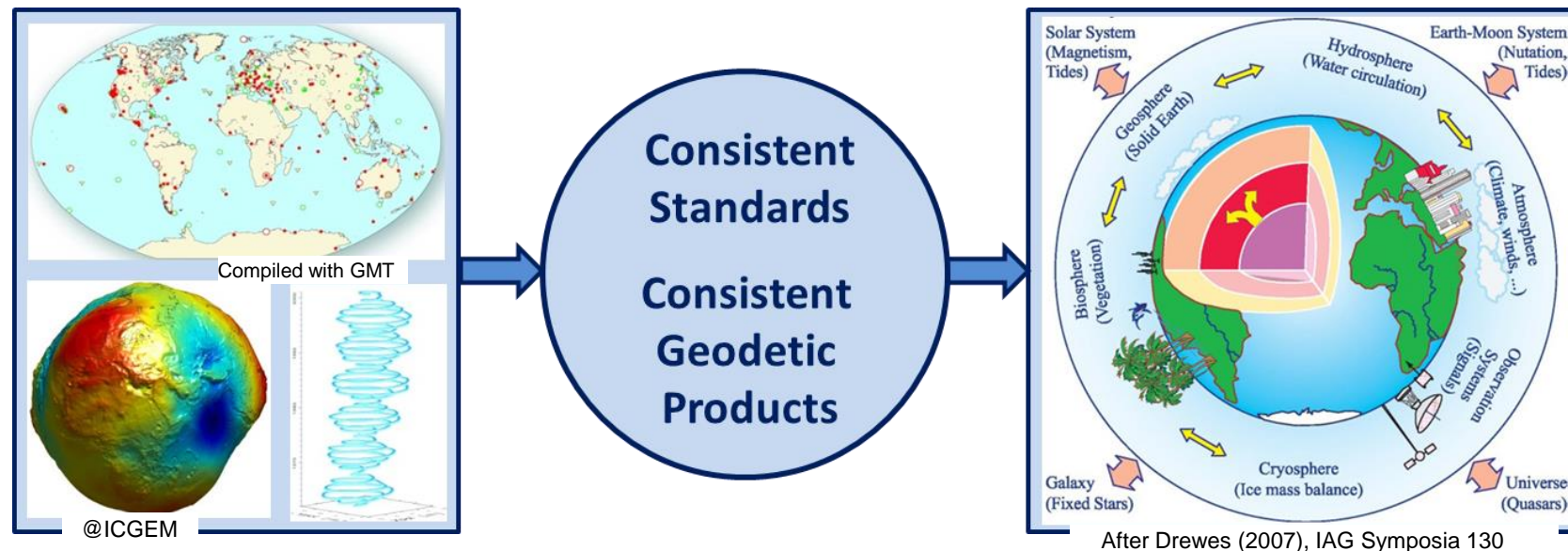
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Bureau of Products and Standards (BPS)

The BPS supports GGOS in its key goal to provide consistent products describing the geometry, rotation and gravity field of the Earth.

Objectives

- contact and coordinating point for homogenization of IAG standards and products
- keep track of the adopted geodetic standards and conventions across all IAG components
- stimulate the development of new geodetic products, needed for Earth sciences and society
- promote geodetic products (see GGOS website, www.ggos.org)



BPS organizational structure

- The BPS is hosted at the Technical University of Munich
- BPS staff:
 - D. Angermann (Director), T. Gruber (Deputy Director), M. Gerstl, R. Heinkelmann, U. Hugentobler, L. Sánchez, P. Steigenberger
- GGOS components associated to the BPS
 - Committee “**Contributions to Earth System Modelling**” (Chair: M. Thomas)
 - Committee “**Definition of Essential Geodetic Variables (EGVs)**” (Chair: R. Gross)
 - Working Group “**Towards a consistent set of parameters for the definition of a new GRS**” (Chair: U. Marti)
- Associated members of the BPS:
 - ~ 15 representatives designated by the IAG Services and other relevant entities involved in geodetic standards and products

Representatives of IAG Services and other entities

R. Heinkelmann, Germany	Intern. Earth Rotation and Reference Systems Service (IERS)	<i>Geometric Services</i>
N. Stamatakos, USA	Intern. Earth Rotation and Reference Systems Service (IERS)	
U. Hugentobler, Germany	International GNSS Service (IGS)	
E. Pavlis, USA	International Laser Ranging Service (ILRS)	
J. Gipson, USA	International VLBI Service for Geodesy and Astrometry (IVS)	
P. Štěpánek, Czech Republic	International DORIS Service (IDS)	
R. Barzaghi, Italy	International Gravity Field Service (IGFS)	<i>Gravimetric Services</i>
S. Bonvalot, France	Bureau Gravimétrique International (BGI)	
M. Reguzzoni, Italy	International Service for the Geoid (ISG)	
E. S. Ince, Germany	International Center for Global Earth Models (ICGEM)	
K. M. Kelly, Germany	International Digital Elevation Model Service (IDEMS)	
H. Wziontek, Germany	International Geodynamics and Earth Tide Service (IGETS)	
J. L. Hilton, USA	IAU Commission A3 "Fundamental Standards" Representative	<i>Other Entities</i>
M. Craymer, USA	Chair of Control Body for ISO Geodetic Registry Network	
L. Hothem, USA	Vice-Chair of Control Body for ISO Geodetic Registry Network	
D. Angermann, Germany	IAG Representative to ISO/TC211	
D. Angermann, Germany	IAG Rep. to UN GGIM SCoG, WG „Data sharing and standards“	
S. Rózsa, Hungary	IAG Communication and Outreach Branch	
J. Kusche, Germany	Representative of gravity community	

BPS Implementation Plan 2020-2022

	2020												2021												2022												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
Strategic Planning Phases	for 2020-2022												for 2023-2024																								
Development Implementation Plan																																					
New Implementation Plan													X												X												
Communication & Coordination Activities																																					
EC Monthly Telecon	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CB Semiannual Meetings (EGU, GGOS Days)													X												X												
Consortium Annual Meeting													X												X												
BPS Meetings (external)													X												X												
BPS Meetings (internal)	X				X				X	X	X		X	X	X	X		X		X			X		X		X		X		X		X		X		X
Specific Tasks - Products and Standards																																					
2nd version BPS inventory	←→																																				
Revision BPS inventory	←→																																				
Publication BPS inventory in Geodesist's HB													X																								
Resolving deficiencies (with IAG Services)	←→																																				
Updating and extending BPS inventory	←→																																				
Classification and description of products	←→																																				
Gap analysis regarding products	←→																																				
Interaction with IAG Services	←→																																				
Interaction with IAU, UN-GGIM, GGCE, ISO, ...	←→																																				
Rewriting IERS Conventions (Chapter 1)	←→																																				
Submission revised Chapter 1 (to IERS CC)																									X												
Outreach Activities																																					
BPS input for new GGOS website	←→																																				
Geodetic products for new GGOS website	←→																																				
BPS input for GGOS outreach material	←→																																				
Preparation UAW and GGOS Days 2021	←→																																				
Co-convenor of GGOS sessions	←→																																				
Publications and presentations	←→																																				

Summary of BPS activities

- Keep track of adopted geodetic standards and conventions (interaction with IAG components and other entities involved), regular updates of BPS inventory required
- Contribute to the re-writing/revising of the IERS Conventions, mainly in the function as Chapter Expert for Chapter 1 “*General definitions and numerical standards*“
- Support the development of integrated products (e.g., GGRF, IHRF, ...)
- Contribute to GGOS Committee „*Definition of Essential Geodetic Variables*“ and GGOS WG „*Towards a consistent set of geodetic parameters for the definition of a new GRF*“

Mainly within
IAG/GGOS

- Interact with external stakeholders in the field of standards and conventions (e.g., IAU, ISO, CODATA, UN-GGIM, GGCE, ...)
- Act as IAG representative to ISO/TC 211 and to the UN-GGIM Subcommittee on Geodesy WG „*Data Sharing and Development of Geodetic Standards*“

External
(outside IAG)

- Interact with GGOS Coordinating Office, IAG Services and GGOS Science Panel regarding the representation of geodetic products at GGOS website
- Contribute to GGOS Video „*Discover GGOS and Geodesy*“
- Planned are developments towards a GGOS Portal (GGOS Coordinating Office, GGOS WG „*DOIs for Geodetic Data Sets*“ and BPS)

Outreach
activities

Product descriptions at GGOS website (www.ggos.org)



About | Observations | Services | **Products** | Events | Blog |



PRODUCTS

Classification

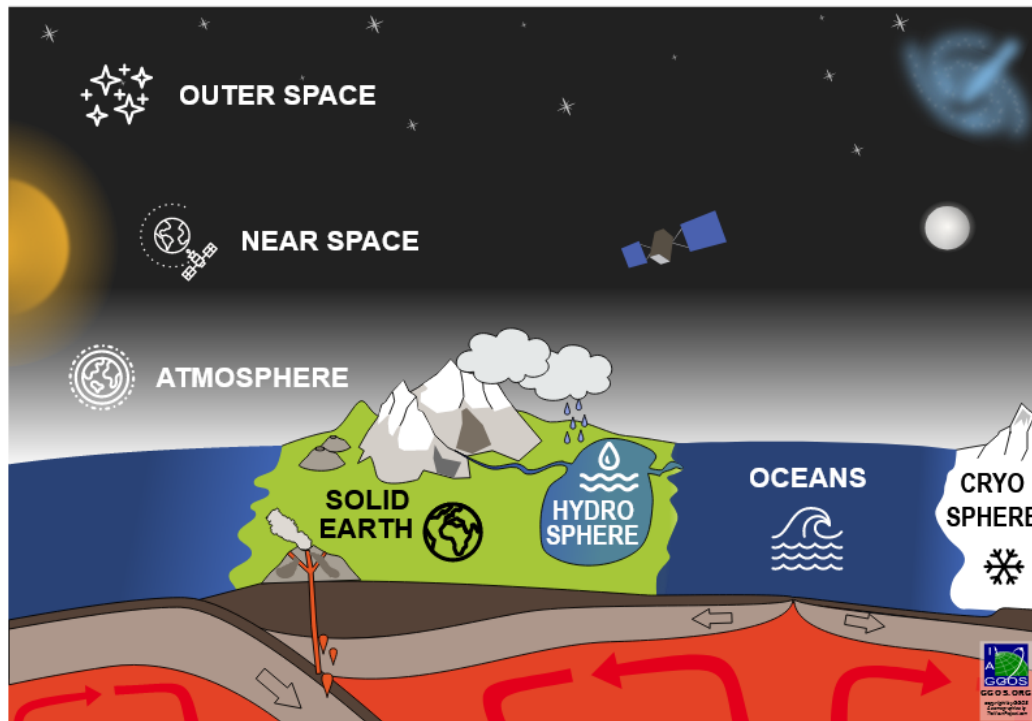
Geodetic Themes

Earth System Components and Space

- Outer Space
- Near Space
- Atmosphere
- Hydrosphere
- Oceans
- Cryosphere

Geodetic Products

EARTH SYSTEM COMPONENTS & SPACE



Reference Frames

- Height Reference Frame
- Celestial Reference Frame
- Gravity Reference Frame
- Terrestrial Reference Frame

Geometry

- Surface Deformation Models
- Ocean Topography Models
- Sea Level Change
- Digital Elevation Model
- Ice Sheets & Glaciers - Variations
- Station Positions & Variations
- Tide Gauge Records
- Sea Surface Heights

Earth Orientation

- Earth Orientation Parameters

Gravity Field

- Global Gravity Field - Models
- Gravity Field - Temporal Variations
- Terrestrial Gravity Data

- Regional / Local Geoid Models

- Ice Sheets & Glaciers - Variations

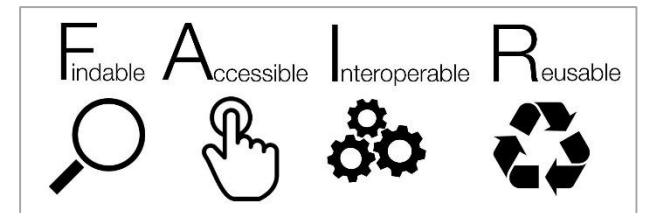
- Height Systems

Positioning & Applications

- Thermosphere
- Ionosphere
- Lower Neutral Atmosphere
- Atmospheric Products
- GNSS Satellite Orbits and Clocks

Final remarks

- Thanks to a **strong collaborative work** between the BPS, the GGOS Coordinating Office, the IAG Services, and the GGOS Science Panel, it has been possible to create a **comprehensive description of geodetic products** for the GGOS website.
- With these product descriptions, the BPS supports GGOS in making geodesy more visible to other disciplines and to society (**Outreach**).
- The **GGOS website provides an information platform** to bring the geodetic observations, products and the IAG Services into the focus.
- Planned are **developments towards a GGOS Portal** (GGOS CO, GGOS WG „DOIs“ and BPS) as a central access and discovery point for geodetic data and products (**One-Step-Shop**)
- **Interoperability** with internal and external portals (IAG Services, GEOSS Portal, EOSDIS, GFZ Data Services, ...)



Angermann D, Gruber T, Gerstl M, Heinkelmann R, Hugentobler U, Sánchez L, Steigenberger P, Gross R, Heki K, Marti U, Schuh H, Sehnal M, Thomas, M: GGOS Bureau of Products and Standards: Description and promotion of geodetic products, IAG 2021 Symposia Series, Springer.