GGOS

GLOBAL GEODETIC OBSERVING SYSTEM

IUGG

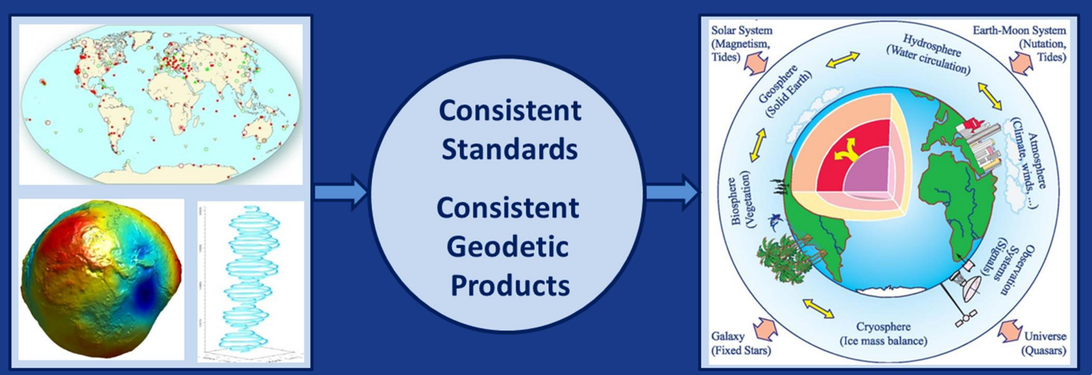
IAG AIG International Association of Geodesy

Bureau of Products and Standards

The GGOS Bureau of Products and Standards (BPS) supports IAG in its goal to obtain consistent products describing the geometry, rotation and gravity field of the Earth. The BPS is built upon existing observing and processing systems of IAG.

Mission and overall objectives of the BPS:

- to serve as contact and coordinating point for the homogenization of IAG standards and products;
- to keep track of the adopted geodetic standards and conventions across all IAG components, and to initiate steps to close gaps and deficiencies;
- to focus on the integration of geometric and gravimetric parameters and to develop new geodetic products needed for Earth sciences and society.



BPS Organizational Structure

The BPS is hosted by DGFI-TUM and IAPG of the Technical University of Munich, Germany.

BPS staff:

D. Angermann, T. Gruber, M. Gerstl, R. Heinkelmann, U. Hugentobler, L. Sánchez, P. Steigenberger

GGOS entities associated to the BPS:

- Committee "**Contributions to Earth System Modelling**", Chair: M. Thomas (Germany)
- Joint Working Group "**Establishment of the Global Geodetic Reference Frame (GGRF)**", Chair: U. Marti (Switzerland)
- Working Group "**ITRS Standards for ISO TC211**", Chair: C. Boucher (France)

Associated members of the BPS:

Position (IAG Service, ...)	Representatives	Entity Contributing
IERS Conventions Center	Gérard Petit (2010-2016)	BIPM (France)
	Nick Stamatakos (since 2017)	USNO (USA)
IERS Analysis Coordinator	Thomas Herring	MIT (USA)
IGS Representative	Urs Hugentobler (BPS staff)	TUM (Germany)
ILRS Analysis Coordinator	Erricos Pavlis	UMBC/NASA (USA)
IVS Analysis Coordinator	John Gipson	GSFC/NASA (USA)
IDS Representatives	Frank Lemoine, John Ries,	GSFC/CSR (USA)
	Jean-M. Lemoine, H. Capdeville	CNES/GRGS (France)
IGFS Chair	Riccardo Barzaghi	Politec. Milano (Italy)
BGI Chair	Sylvain Bonvalot	IRD (France)
ISG President	Mirko Reguzzoni	Politec. Milano (Italy)
ICGEM Chair	Franz Barthelmes	GFZ (Germany)
IDEMS Director	Kevin M. Kelly	ESRI (USA)
IGETS Chair	Hartmut Wziontek	BKG (Germany)
Gravity Comm. (Corresp. Member)	Jürgen Kusche	Uni. Bonn (Germany)
IAG Representative to ISO	Johannes Ihde	BKG, now GFZ (Germany)
IAG Comm. and Outreach	Josef Ádám	Uni. Budapest (Hungary)
IAU Representative	Robert Heinkelmann (BPS staff)	GFZ (Germany)
Control Body for ISO Geodetic Registry	Mike Craymer (Chair)	NRCan (Canada)
	Larry Hothem (Vice Chair)	USA

Highlights of BPS activities

- Compilation of an inventory on standards and conventions used for the generation of IAG products (Angermann et al., 2016, in IAG Geodesist's Handbook 2016, doi:10.1007/s00190-016-0948-z);
- Focus on numerical standards: The development of a new Geodetic Reference System is recommended (see Table below) ;

Numerical standards of conventional parameters in use within IAG

	a [m]	**GM** [10^{12} m^3 s^{-2}]	J_2 [10^{-6}]	ω [10^{-5} rad s^{-1}]	U_0 or W_0 [m^2 s^{-2}]
GRS80 (1979)	6 378 137	398.600 5	1 082.63	7.292 115	62 636 860.850
IERS Conv. (2010)	6 378 136.6	398.600 441 8	1 082.635 9	7.292 115	62 636 856.0 (1998)
EGM2008	6 378 136.3	398 600 441.5	1 082 636 1	7.292 115	
IAG Res. (2015)					62 636 853.4

- Focus on relevant IAG products:
  - Celestial reference systems and frames
  - Terrestrial reference systems and frames
  - Earth Orientation Parameters (EOP)
  - GNSS satellite orbits
  - Gravity and geoid
  - Height systems and their realization
- Assessment of the present status, identification of deficiencies, recommendations to resolve inconsistencies and to close gaps (interaction with IAG Services).

BPS tasks (as specified in its Implementation Plan 2017-2018):

- to continue the work regarding standards and conventions, to address the recommendations given in the BPS inventory;
- to focus on the integration of geometric and gravimetric observations and to support the development of integrated products (e.g., GGRF, IHRF, atmosphere products);
- to contribute to GGRF activities (e.g., IAG representation for *„Data Sharing and Development of Geodetic Standards*");
- to strengthen interaction to ext. Stakeholders, e.g. ISO, IAU;
- to initiate steps to identify the user needs and requirements for geodetic products (gap analysis).

BPS Communications Plan 2017-2018

	2017												2018											
GGOS communications with BPS participation																								
Coordinating Board meetings				x					x							x						x		
Consortium meetings									x													x		
EC telecons (monthly)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CO/BNO/BPS/SP (quarterly)	x			x			x			x			x			x			x			x		
Reporting (1-page reports)				x					x							x						x		
Operational BPS bureau business																								
Internal BPS meetings	x		x		x		x			x			x		x		x		x			x		
BPS Board meetings				x					x							x						x		
Reporting of BPS entities				x					x							x						x		
Monitoring progress				x					x							x						x		

Image courtesy of the Earth Sciences and Remote Sensing Unit, NASA Johnson Space Center

GFZ Helmholtz-Zentrum Potsdam

DLR