GGOS Report

presented by
Richard S. Gross

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, CA 91109–8099, USA

International Earth Rotation and Reference Systems Service
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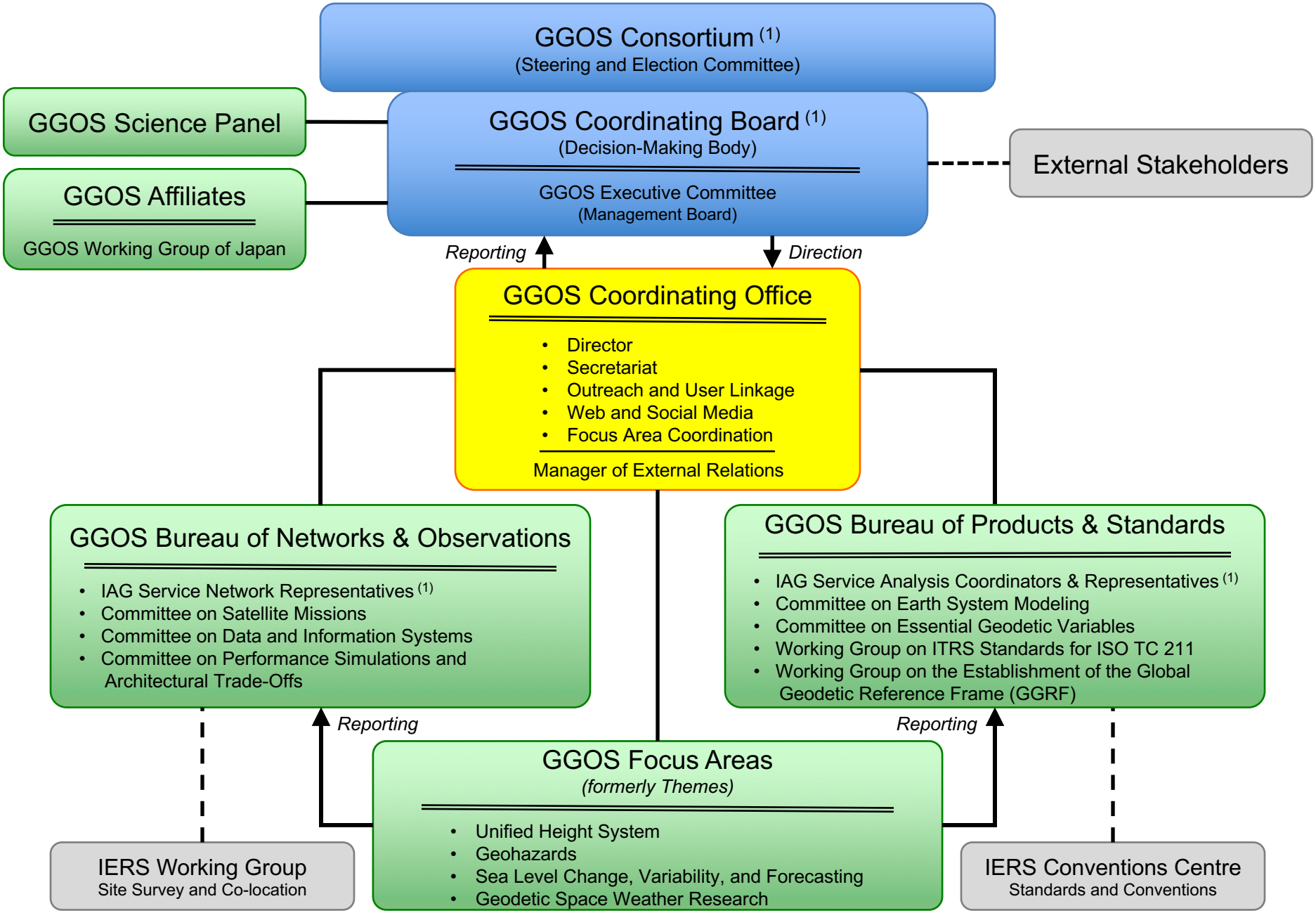
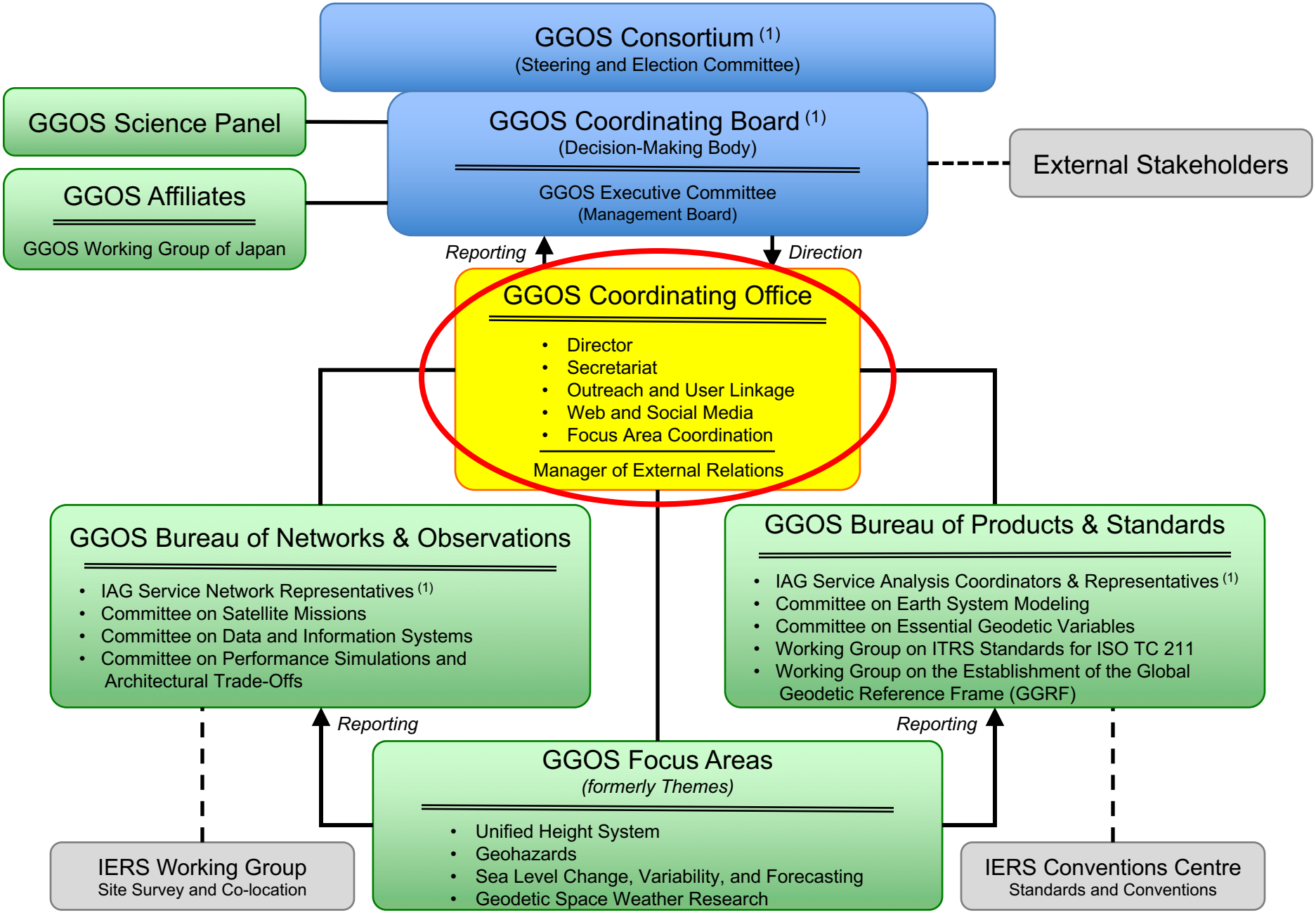


(1) GGOS is built upon the foundation provided by the IAG Services, Commissions, and Inter-Commission Committees



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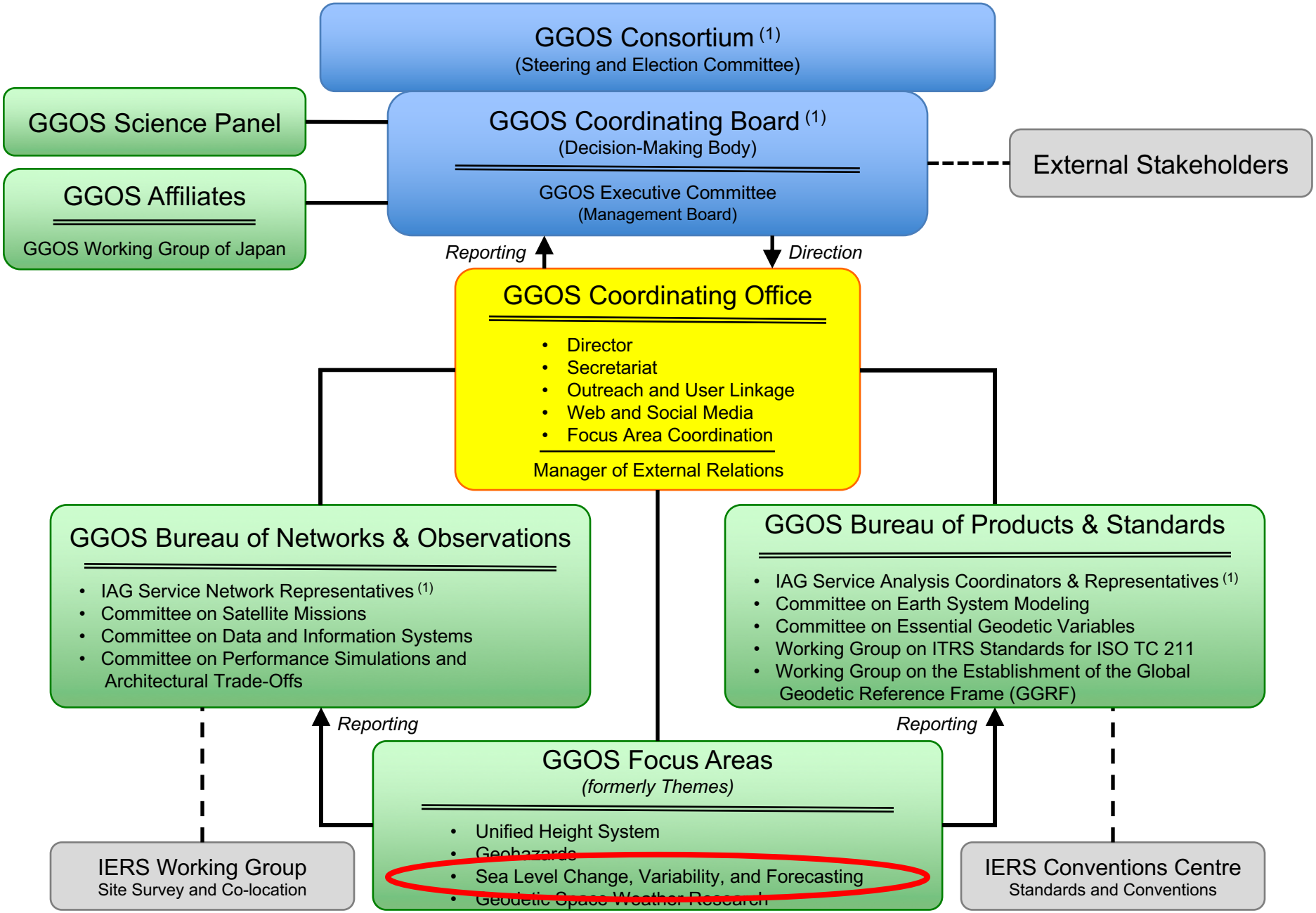
Coordinating Office

- Director of Coordinating Office
  - Matthias Madzak
    - Resigned effective October 31, 2018
    - To take position in industry
- Acting Director of Coordinating Office
  - Martin Sehnal
    - Was Matthias' assistant
- Host of Coordinating Office
  - Bundesamt für Eich- und Vermessungswesen (BEV)
    - In process of finding permanent replacement



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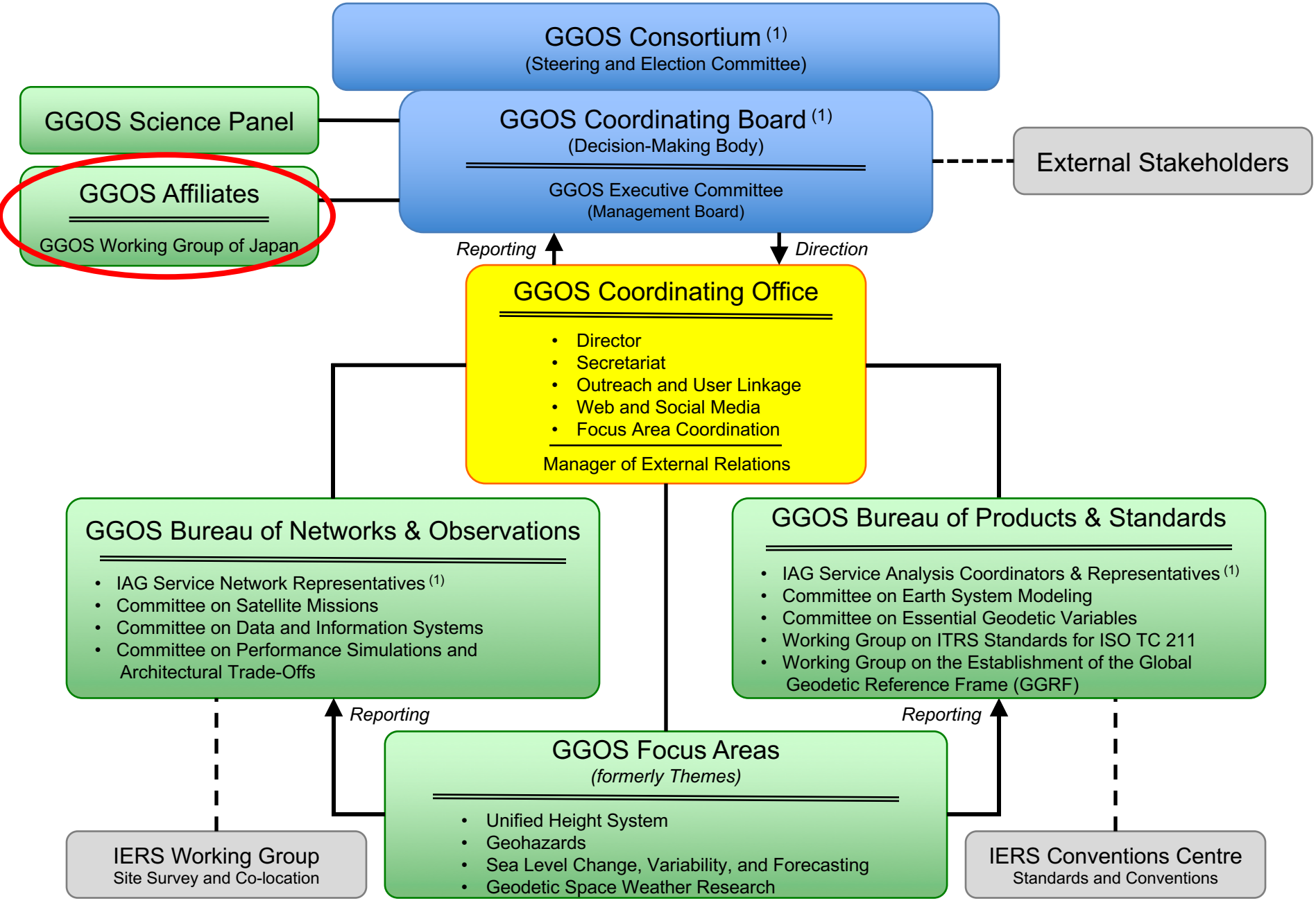
GGOS Focus Area on Sea Level

- Lead of Focus Area
  - Tilo Schöne
    - Resigned effective September 30, 2018
- Currently discussing options for continuation
  - Continue current focus
    - Liaise with sea level community
  - Redirect focus



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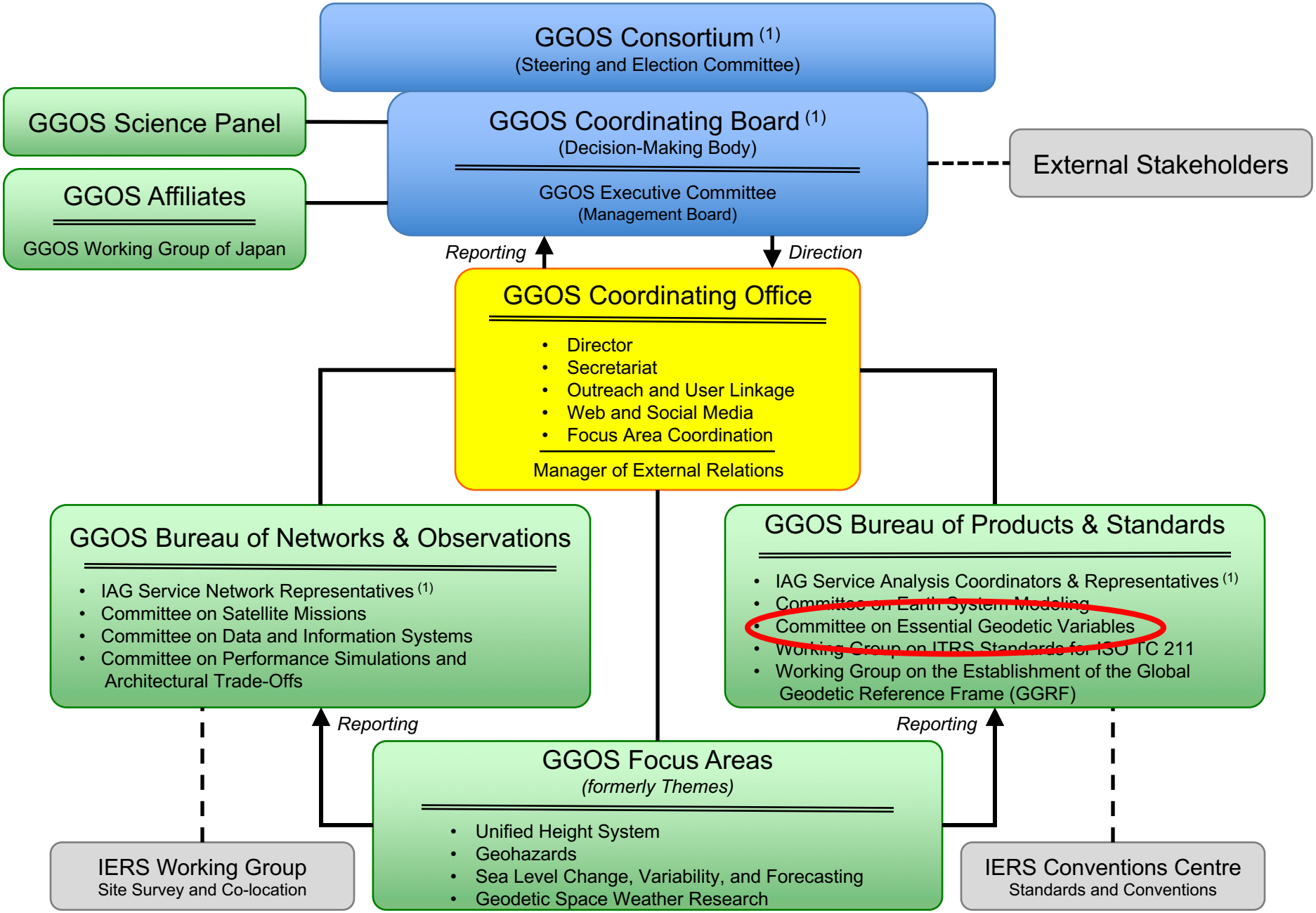
GGOS Affiliate

- National or regional organization
  - That coordinates space-geodetic activities there
- Established to increase participation in GGOS
  - Particularly from under-represented areas
    - Africa, Asia, South and Central America
- Is a component of GGOS
  - With representation on Consortium and Coordinating Board
    - Each GGOS Affiliate has 1 representative to Consortium
    - Collectively they have 2 representatives to Coordinating Board
- First GGOS Affiliate
  - GGOS Working Group of Japan
    - Established in 2013; Chair: Toshi Otsubo of Hitotsubashi University, Japan
    - Provides forum for multi-technique, space-geodetic discussions within Japan
    - Strives to improve quality of observations & encourage collaboration in Japan
- Encourage others to become GGOS Affiliates
  - Held discussions to encourage new GGOS Affiliates
    - Spain; German (DACH?) Geodetic Commission; Nordic Geodetic Commission



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Essential Geodetic Variables

- Observed variables
  - Crucial to characterizing geodetic properties of Earth
  - Key to sustainable geodetic observations
    - Positions of reference objects (ground stations, radio sources), EOPs
    - Gravity measurements (ground-based, space-based)
- Assign requirements to each EGV
  - Accuracy, spatial and temporal resolution, latency, stability, …
- Derive requirements
  - On EGV-dependent products (TRF, CRF, …)
  - On infrastructure (observing systems)
- Can be used to update GGOS2020 book
  - Bottoms-up approach to deriving requirements
    - Complements top-down approach used in GGOS2020 book (user needs)
- Established Committee within GGOS BPS
  - To create list of EGVs, assign requirements to them, etc.
  - Committee includes representatives of
    - IAG Services, Commissions, Intercommission Committees, GGOS Focus Areas

Committee on EGVs

GGOS
- Detlef Angermann (Germany)
- Richard Gross, Chair (USA)
- Harald Schuh (Germany)

GGOS Focus Area 1
(Unified Height System)
- Bernhard Heck (Germany)

GGOS Focus Area 2
(Geohazards Monitoring)
- Diego Melgar (USA)

GGOS Focus Area 3
(Sea Level Change)
- Don Chambers (USA)

GGOS Focus Area 4
(Space Weather)
- Ehsan Forootan (UK)

IAG Commission 1
- Markus Rothacher (Switzerland)
- Geoffrey Blewitt (USA)

IAG Commission 2
- Kosuke Heki (Japan)
- Thomas Gruber (Germany)

IAG Commission 3
- Jianli Chen (USA)
- Jose Ferrandiz (Spain)

IAG Commission 4
- Jens Wickert (Germany)
- Pawel Wielgosz (Poland)

IAG ICC Theory
- Yoshiyuki Tanaka (Japan)
- Mattia Crespi (Italy)

IERS
- Tom Herring (USA)

IGS
- Tom Herring (USA)
- Michael Moore (Australia)

ILRS
- Erricos Pavlis (USA)
- Jürgen Müller (Germany)

IVS
- John Gipson (USA)
- Johannes Böhm (Austria)

IDS
- Laurent Soudarin (France)
- Jean-Michel Lemoine (France)

IGFS
- Urs Marti (Switzerland)
- Georgios Vergos (Greece)

BGI
- Sylvain Bonvalot (France)

ICGEM
- E. Sinem Ince (Germany)

ISG
- Jianliang Huang (Canada)

IGETS
- Hartmut Wziontek (Germany)
- Jean-Paul Boy (France)

IDEMS
- Christian Hirt (Germany)
- Michael Kuhn (Australia)

PSMSL
- Svetlana Jevrejeva (UK)

BIPM
- TBD

Total: 35

DOIs for Geodetic Data

DOIs for Geodetic Data

- Digital Object Identifiers (DOIs) for publications
  - Widely used by publishers
    - More than 5000 publishers participate in DOI system
  - Unique identifier of publication
    - DOI is resolved into URL where the publication can be found (landing page)
    - Landing page contains abstract of publication, PDF, etc.
  - DOI system managed by International DOI Foundation (IDF)
- DOIs for data sets
  - Benefits to users
    - Easy access to data cited in journal article – just click on DOI
    - Improves traceability of published results – eliminates confusion about data used
    - Improves discoverability of data sets – enables wider distribution of data sets
  - Benefits to data providers
    - Providers can include information about data set on landing page (metadata)
    - Easily allows number of data publications to be tracked
    - Allows number of times data is used to be counted
    - Allows data providers to receive proper credit for their published data

DOIs for Geodetic Data, cont.

- Registration agency
  - Manages DOI to URL mapping
    - Established by interested community (geodetic community)
    - Qualified by International DOI Foundation
  - Develops registration server to share among data providers
    - Registration agency assigns DOI prefix, data provider suffix: doi:prefix/suffix
- Granularity of DOI assignment
  - One data set = one DOI
    - Even if data set is updated
    - Example: IVS contribution to ITRF2014 (data set does not change)
    - Example: IGS Final combined EOPs (data set changes, but not file name)
- Establish Working Group
  - Representatives of Services, data centers
  - Establish procedures for assigning DOIs to geodetic data sets
    - Registration Agency
    - Standardized DOI naming convention
    - etc.

Meetings

GGOS Days 2018

GSI Headquarters

Tsukuba, Japan; 02–05 October 2018

Other Meetings

- European Geosciences Union
  - Vienna, Austria; 08–13 April 2018
  - GGOS Session
    - *The Global Geodetic Observing System: Reaching 1 mm*
    - Conveners: Matthias Madzak, Mike Pearlman, Richard Gross, Detlef Angermann
  - Bureau of Products and Standards Meeting
    - Vienna, Austria; 11 April 2018; 13:30–15:30
    - Chair: Detlef Angermann
  - Bureau of Networks and Operations Meeting
    - Vienna, Austria; 11 April 2018; 15:30–18:30
    - Chair: Mike Pearlman
  - PLATO Working Group Meeting
    - Vienna, Austria; 09 April 2018; 14:00–16:00
    - Chairs: Daniela Thaller and Benjamin Männel
- Japan Geoscience Union
  - Makuhari Messe, Chiba, Japan; 20–24 May 2018
  - GGOS Session
    - *Geodesy General Contributions & Global Geodetic Observing System*
    - Conveners: Koji Matsuo, Yusuke Yokota, Takahiro Wakasugi

Other Meetings, cont.

- ISC WDS International Program Office – NICT
  - Koganei, Tokyo, Japan; 01 October 2018
- American Geophysical Union
  - Washington, DC; 10–14 December 2018
  - GGOS Session
    - *The Global Geodetic Observing System: Essential Geodesy for Earth and Planetary Rotation*
    - Conveners: Kosuke Heki, Matthias Madzak, Richard Gross, Veronique Dehant
  - Bureau of Networks and Operations Meeting
    - Washington, DC; 10 December 2018; 9:00–12:00
    - Chair: Mike Pearlman

Future Meetings

- European Geosciences Union
  - Vienna, Austria; 07–12 April 2019
  - GGOS Session
    - *The Global Geodetic Observing System: Essential Variables for Geodesy*
    - Conveners: K. Heki, D. Angermann, R. Gross, M. Madzak, M. Pearlman
  - Bureau of Products and Standards Meeting
    - Chair: Detlef Angermann
  - Bureau of Networks and Operations Meeting
    - Chair: Mike Pearlman
  - PLATO Working Group Meeting
    - Chairs: Daniela Thaller and Benjamin Männel
- International Union of Geodesy and Geophysics
  - Montreal, Canada; 08–18 July 2019
  - GGOS Symposium
    - *Monitoring and Understanding the Dynamic Earth with Geodetic Observations*
    - Conveners: R. Gross, D. Angermann, M. Madzak, T. Otsubo
- GGOS Days / SIRGAS
  - Rio de Janeiro, Brazil; 11–14 November 2019
- American Geophysical Union
  - San Francisco, CA; 09–13 December 2019

thank you
danke
謝謝
ngiyabonga
شكراً جزيلاً
teşekkür ederim
gracias
спасибо
Баярлалаа
рахмат
mersi
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kia ora
dank je
misaotra
matondo
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grazzi
mahalo
tapadh leat
faafetai lava
vinaka
спасибі
blagodaram
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dankie
nanni
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shukriya
mercé
мерси
তোমাকে ধন্যবাদ
감사합니다
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ευχαριστώ
merci