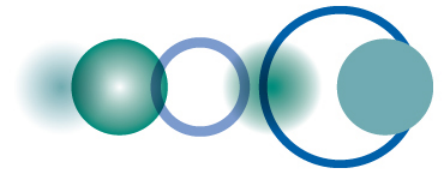


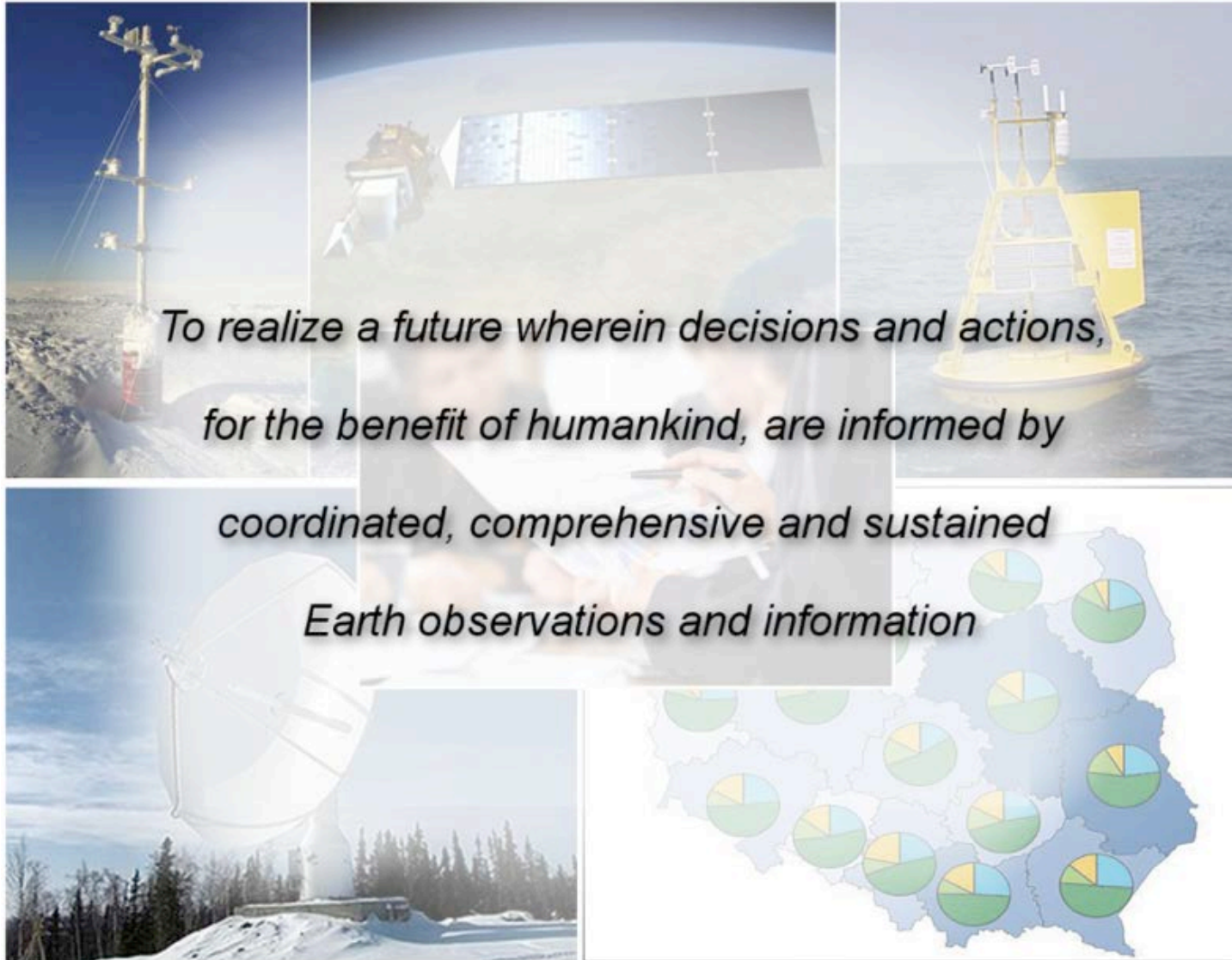
GEO and A Look Forward

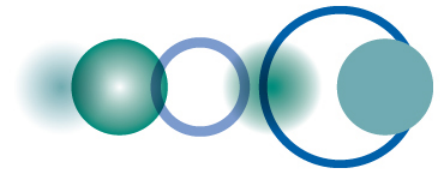
Osamu Ochiai
On behalf of Barbara Ryan
GEO Secretariat
9th GEOSS Asia-Pacific Symposium
11-13 January 2017, Tokyo





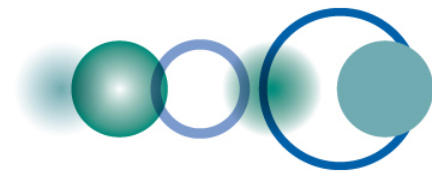
GEO Vision





2016 Progress

- Reinforcing GEO's 'convening power' – Members, POs, Development Banks, Foundations, emerging Commercial Sector;
- Continued evolution & recognition of Policy Mandates;
- Transition year for GEO's Programme;
- Implementation of new programmatic mechanisms – Community Activities, Initiatives and Foundational Tasks.



GEO-XIII highlights

Hosted by Russian Federation (ROSHYDROMET/ROSCOSMOS)

St. Petersburg, November 9-10, 2016



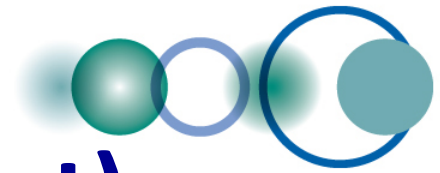
Message from
ISS Russian Cosmonauts



400+ Participants
20 Side Events
10 Exhibits
75 Commercial
Participants

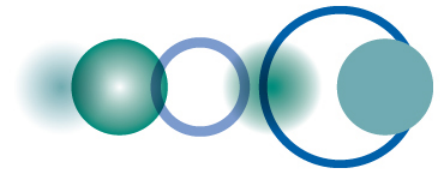
Private Sector Panel





GEO-XIII highlights (cont)

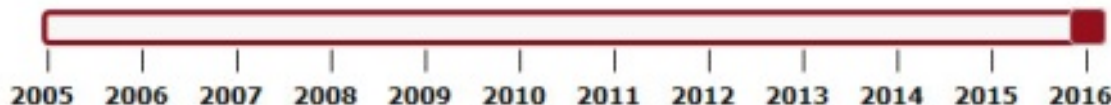
- *Approved new members, participating organizations and observers*
- *Follow up of the Mexico City Ministerial Declaration:*
 - *Broad engagement to leverage GEO's convening power, including commercial sector – **set Initial 3 priorities***
 - *Support for SDGs - **role of GEO Principals to engage with national statistical agencies, inform of importance of EO and GEO***
 - *Agreed to pursue implementation of **Data Sharing Principles** and **Data Management Principles***
 - *Strengthened and facilitated regional initiatives – **established AfriGEOSS, AmeriGEOSS and AOGEOSS***
- *Brand new released GEOSS Portal as one stop entry point to discover and access GEOSS assets – visit **geoportal.org***
- *Approved the GEO Work Programme 2017-2019*
- *Approved the GEO Executive Committee members*
- *Approved the GEO Programme Board Slate of nominees*



103 GEO Members

Asia and Oceania

Australia, Bahrain, Bangladesh, China, India, Indonesia, Iran, Israel, Japan, Korea, Republic of, Malaysia, Mongolia, Nepal, New Zealand, Pakistan, Philippines, Thailand, United Arab Emirates, Vietnam

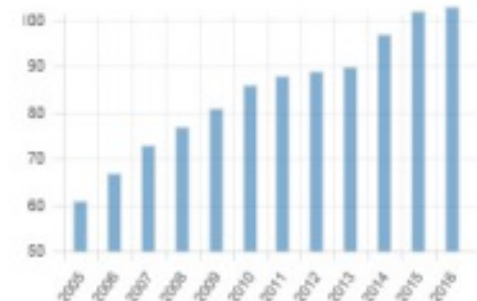


Number of Members (2016)

Africa:	27
Americas:	16
Asia/Oceania:	19
C.I.S.:	7
Europe:	34

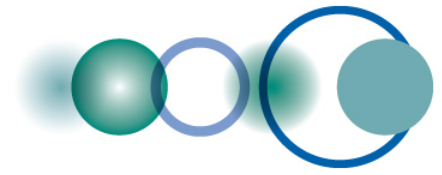
Total:	103
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Number of Members by year



106 Participating Organizations

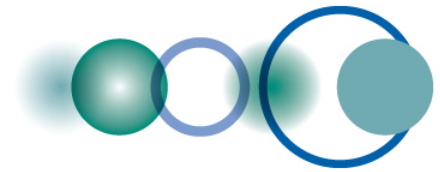




A Global Earth Observation System of Systems



**Integrating Earth Observations Across Many Platforms
and Disciplines to Benefit Society**



8 Societal Benefit Areas





GEO Governance Structure in 2017

- GEO Plenary
 - 103 Member Governments, 106 Participating Organizations, 12 Observers
- GEO Executive Committee
 - Africa: Egypt, Senegal, South Africa
 - Americas: Colombia, Mexico, United States
 - CIS: Armenia, Russian Federation
 - Asia/Oceania: Australia, China, Japan, Korea
 - Europe: EC, Finland, France, United Kingdom
 - Observers from Programme Board: TBD
- GEO Programme Board
 - 33 members from GEO Members and Participating Organizations



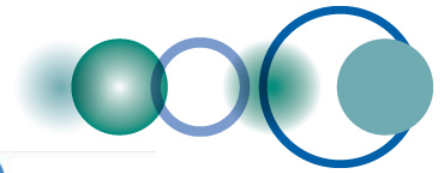
Engagement Priorities 2017-2019

Five priorities:

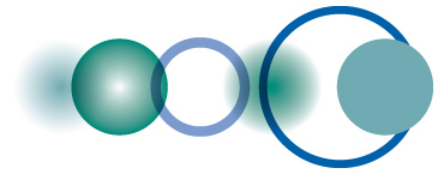
- 2030 Agenda for Sustainable Development
- Climate Change – Greenhouse Gas Monitoring
- Disaster Risk Reduction
- Resilient cities and human settlements
- Ecosystem accounting

Criteria:

- **Political relevance** building on well-established, recent or upcoming international agreements
- **Strong and active communities and activities in GEO**
- **Potential to secure resources**



Transforming Our World: The 2030 Plan for Global Action - Article 76:
“We will promote transparent and accountable scaling-up of appropriate public-private cooperation to exploit the contribution to be made by a wide range of data, including Earth observation and geo-spatial information, while ensuring national ownership in supporting and tracking progress.”



Data Sharing and Management Principles

- Reaffirm support for GEO's Data Sharing Principles (DSPs) and Data Management Principles (DMPs)
 - DSPs: Full&open exchange, Minimum time delay and minimum cost, Free of charge or no more than reproduction cost
 - DMPs: Discoverability, Accessibility, Usability, Preservation and Curation
- Resolve to pursue implementation of DSPs & Data Management Principles (DMPs)
 - DSPs for selling benefits of open data to government,
 - DMPs for focusing on common variables to improve data quality and usability

Enabling System of Systems

International Data Providers*

Environment



Biodiversity



Disasters



Energy



Food & Security



Satellites



Water



Health



Urban



Regional and National Providers*

Chile



China



France



Germany



Italy



Japan



New Zealand



Norway



United Kingdom



India



Russia



South Africa



Spain



USA



Private Sector Providers



GEO Website



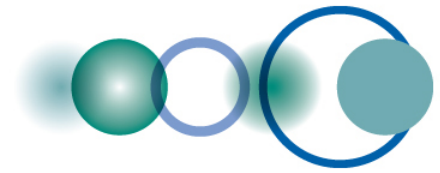
GEOS Portal



GEO DAB

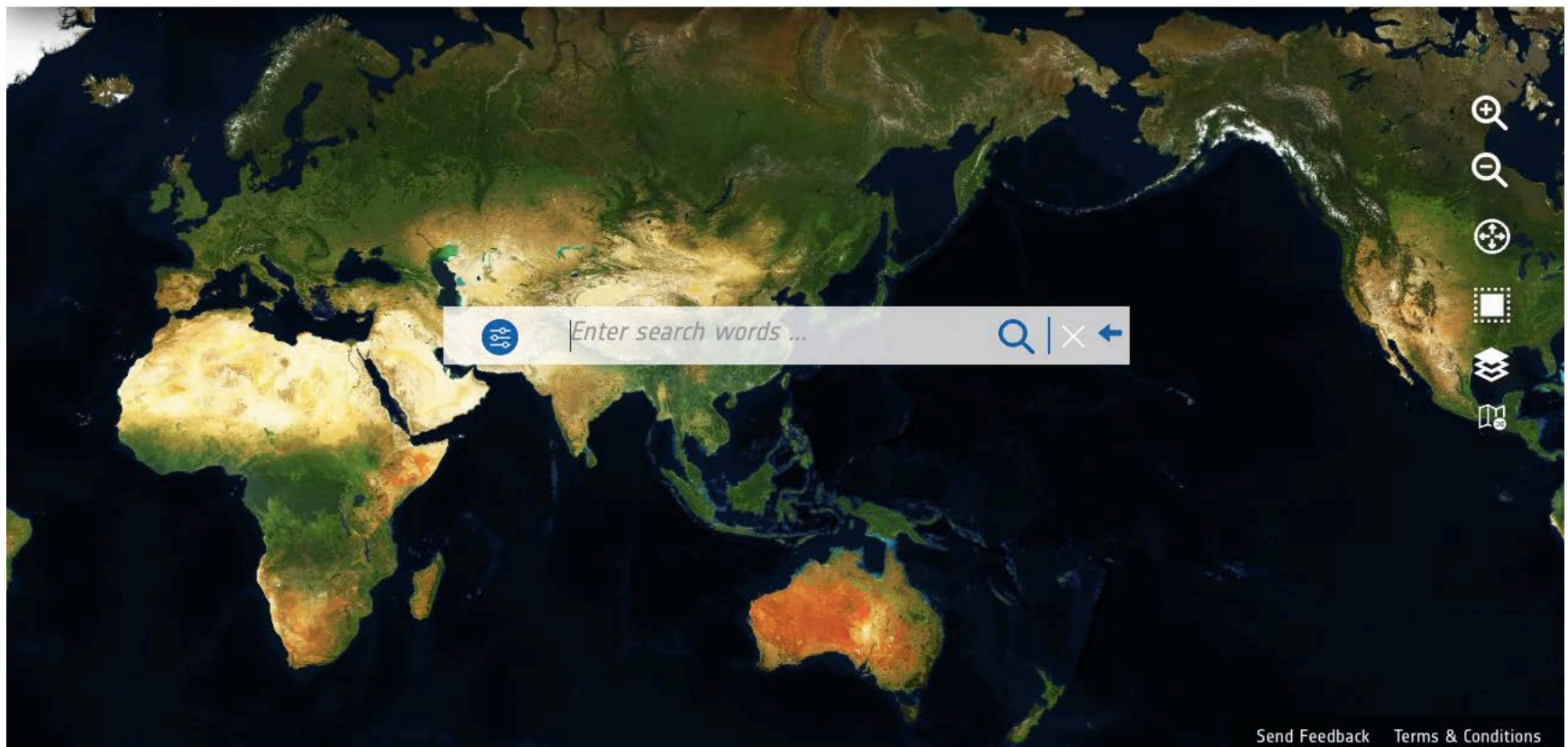
Discovery and Access Broker (DAB)

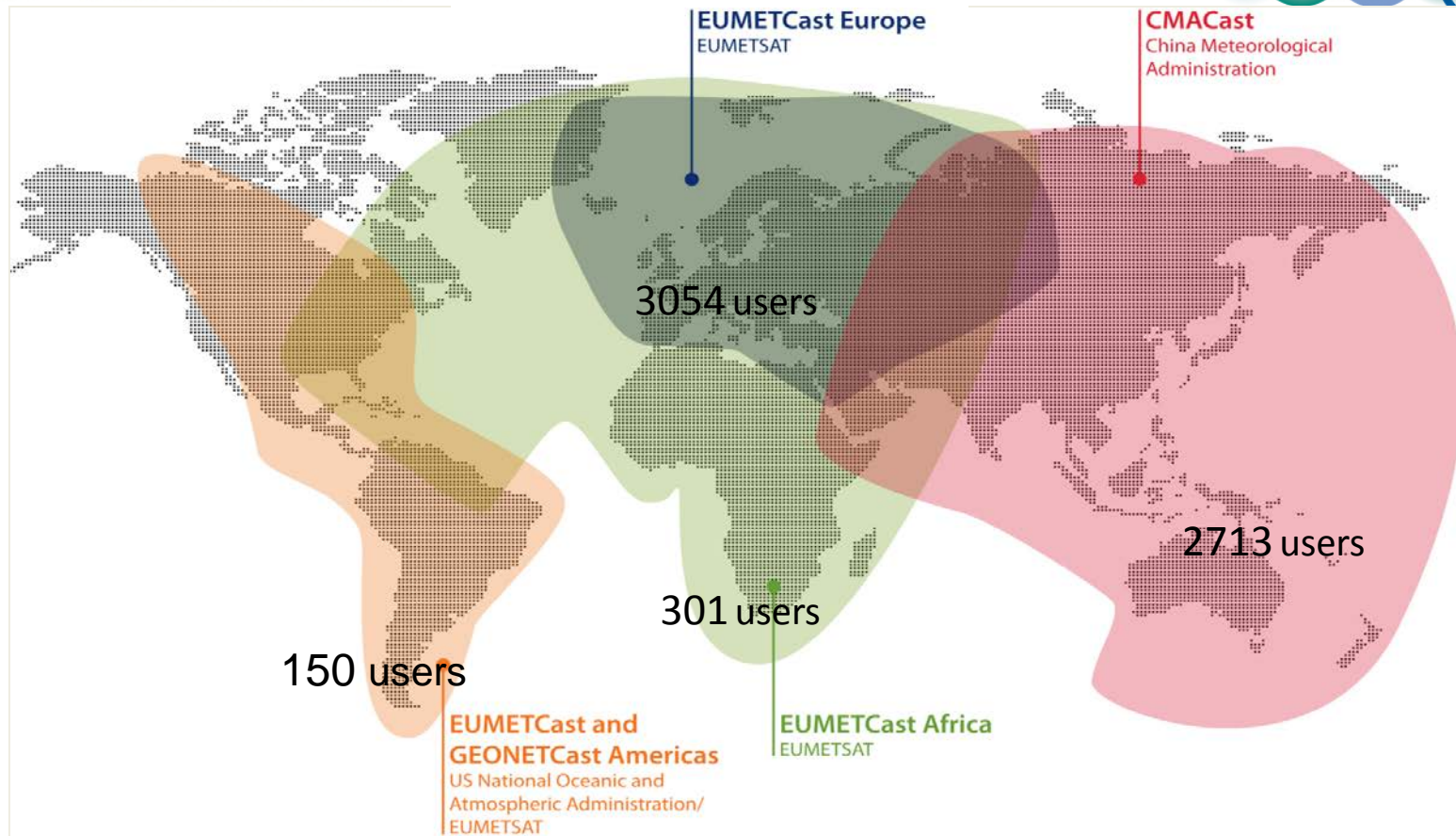
* more than a hundred in total



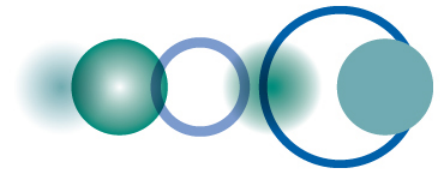
New released GEOSS Portal

geoportal.org

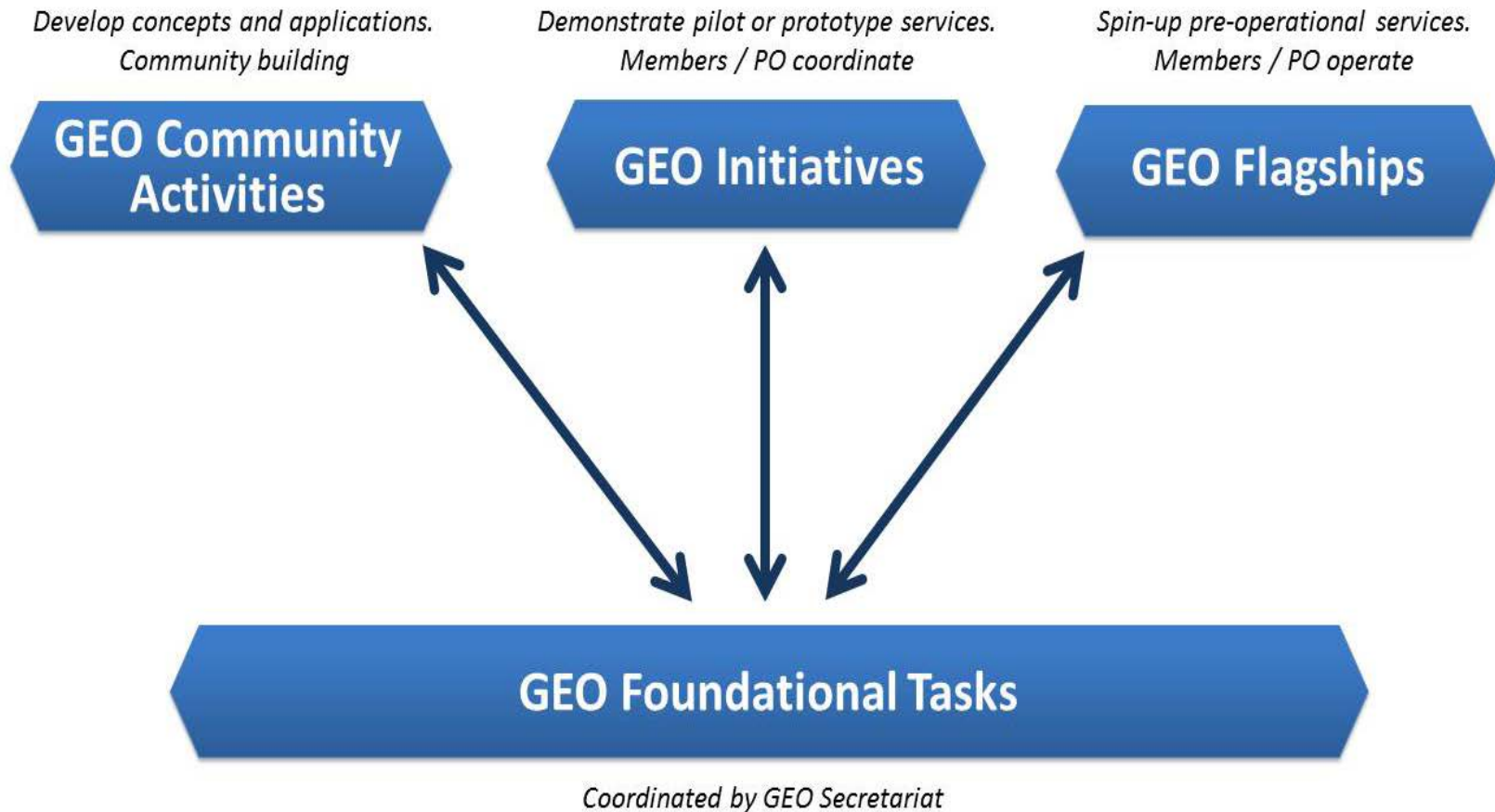


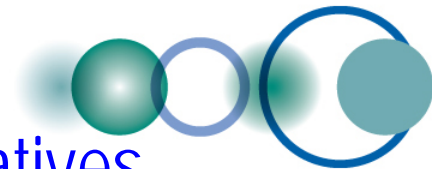


- New stations deployed throughout the system (around 20 per month)
- Shared user management between EUMETCast & CMACast for users of exchanged data
- Broadcast bandwidth increased in Europe (DVB-S2 service) to accommodate new satellites & products






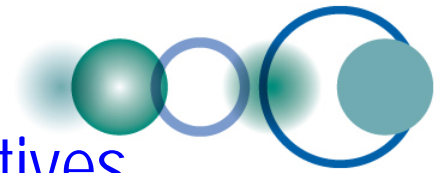
Four Types of GEO Implementation mechanisms










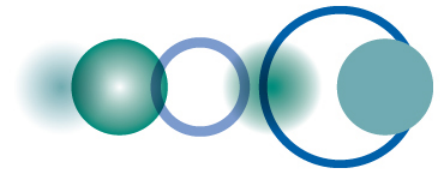
SBAs, Community Activities and Initiatives

SBA	GEO <i>Flagships</i> and Initiatives	Community Activities
	<i>GEO Biodiversity Observation Network (GEO BON)</i>	Harmful Algal Bloom (HAB) Early Warning System
	<i>Global Forest Observation Initiative (GFOI)</i>	
	GEO Global Ecosystem Initiative (GEO ECO)	
	GEO Global Network for Observation and Information in Mountain Environments (GEO-GNOME)	Global Mangrove Monitoring
	Earth Observations for Ecosystem Accounting (EO4EA)	
	GEO Wetlands Initiative	
	Geohazard Supersites and Natural Laboratories (GSNL)	Space and Security
		Chinese Tsunami Mitigation System
	Global Wildfire Information System (GWIS)	Earth Observations for Disaster Risk Management
		Global Flood Risk Monitoring
	Data Access for Risk Management (GEO-DARMA)	Earth Observations for Geohazards, Land Degradation and Environmental Monitoring
		Global Flood Awareness System (GloFAS)
	GEO Vision for Energy (GEO VENER)	Earth Observations for Managing Mineral Resources



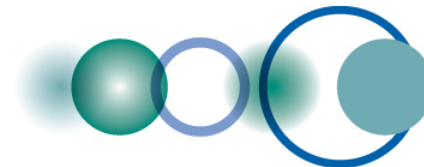
SBAs, Community Activities and Initiatives

SBA	GEO <i>Flagships</i> and Initiatives	Community Activities
	<i>GEO Global Agricultural Monitoring (GEO-GLAM)</i>	Global Agricultural Drought Monitoring
		
	<i>Global Observation System for Mercury (GOS4M)</i>	AIRNOW International: Expanding Networks and Integrating Methods for Air Quality and Health Data
	Global Observation System for Persistent Organic Pollutants (GOS4POPS)	
	Global Urban Observation and Information	
	GEO Human Planet Initiative: Spatial Modeling of Impact, Exposure And Access to Resources	
	GDIS (Global Drought Information System)	In Situ Observations For Water Cycle
		Aquawatch
	GEOCRI (Information Systems for Cold Regions)	DIAS
	GEOGLOWS (GEO Global Water Sustainability)	EARTH2OBSERVE
		Water-Energy-Food Nexus



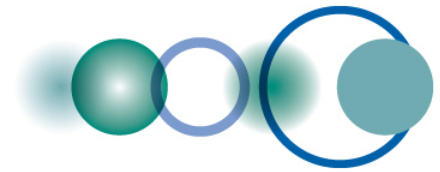
GEO Initiatives not associated with one SBA

GEO Carbon and Greenhouse Gas Initiative	Climate
Climate Change Impact Observation On Africa's Coastal Zones (GEO-CCIOACZ)	
AfriGEOSS: Reinforcing Regional African Engagement	Regional Coordination
AmeriGEOSS	
Asia-Oceania GEOSS (AOGEOSS)	
Oceans and Society: BLUE PLANET	Ocean
Earth Observations in Service of the 2030 Agenda For Sustainable Development	SDGs
GEOSS-EVOLVE	Support GEOSS



Community Activities not associated with one SBA

GFCS - GEO Collaboration	Climate
TIGGE (THORPEX Interactive Grand Global Ensemble) Evolution into a Global Interactive Forecast System (GIFS)	
Research Data Science Summer Schools	Capacity Building
Forest Biodiversity in Asia and the Pacific Region: Capacity Building Phase	
Advancing Communications Network	Support to GEOSS
Land Cover and Land Cover Change	
Land Cover for Africa	
Copernicus Atmospheric Monitoring Service (CAMS)	
Copernicus Climate Change Service (C3S)	
Digital GEOMEUSIUM	
Earth Observations for Cultural Heritage Documentation	
African Geochemical Baselines	
Himalayan GEOSS	
Socio-Economic Benefits from Earth Observations	



Foundational Tasks

GEOSS Development and GCI Operations
Advancing GEOSS Data Sharing Principles
GEOSS Common Infrastructure (GCI) Operations
GEOSS In Situ Earth Observation Resources
GEOSS Satellite Earth Observation Resources
GEONETCast Development and Operations
User Needs and Gaps Analysis
Community Development
Capacity Building coordination
Secretariat Operations
Management and Support
Communication and Engagement
Monitoring and Evaluation

Sustainable Development Goals

GEO & Earth Observations in Service to Agenda 2030

Target										Goal	Indicator						
Contribute to progress on the Target yet not the Indicator per se											Direct measure or indirect support						
DRAFT					1.4	1.5					1.4.2						
					2.3	2.4	2.c				2.4.1						
	3.3				3.4	3.9			3.d		3.9.1						
								5.a		5.9.1	5.a.1						
	6.1	6.3	6.4	6.5	6.6	6.a	6.b			6.3.2	6.4.2	6.5.1	6.6.1				
					7.2	7.3	7.a			7.b		7.1.1					
								8.4									
					9.1	9.4	9.5			9.a		9.1.1	9.4.1				
					10.6	10.7	10.8			10.a							
	11.1	11.3	11.4	11.5	11.6	11.7	11.b	11.c			11.1.1	11.2.1	11.3.1	11.5.2	11.6.2	11.7.1	
					12.2	12.4	12.8			12.a	12.b		12.a.1				
					13.1	13.2	13.3			13.b		13.1.1					
	14.1				14.2	14.3	14.4	14.6	14.7	14.a		14.3.1	14.4.1	14.5.1			
	15.1	15.2	15.3	15.4	15.5	15.7	15.8	15.9			15.1.1	15.1.2	15.2.1	15.3.1	15.4.1	15.4.2	
								16.8									
	17.2	17.3	17.6	17.7	17.8	17.9	17.16	17.17	17.18		17.6.1	17.18.1					

Alignment of Earth Obs. and GEO to the 17 Goals, 169 Targets, and 230 Indicators

SDGs with most opportunities:



Taking it to scale . . .

Next Steps

Work with statistical agencies to ensure the methods are sound for use with Indicators and Targets

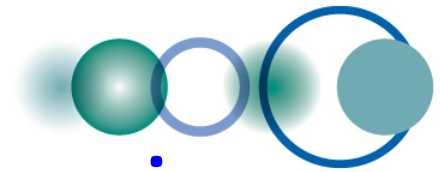
Ensure the methods and solutions are available for all to use

Support countries and stakeholders to use the methods and build capacity

Regional Initiatives

Resolve to strengthen & facilitate active participation of developing countries, including through Regional Initiatives – AfriGEOSS, AmeriGEOSS, AOGEOSS





9th GEOSS Asia-Pacific Symposium



GEOSS Asia-Pacific Symposium

*Earth Observations Supporting the Implementation
of the SDGs in the Asia Pacific Region*

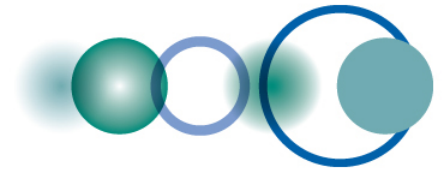
Date

11th-13th January 2017

Venue

Tokyo International Exchange Center, Plaza Heisei, Japan

- Plenary – Country report on implementing national GEOSS and SDGs, Panel discussions
- 5WGs
 - WG1: Asia Water Cycle Initiative
 - WG2: Asia Pacific Biodiversity Observation Network (AP-BON)
 - WG3: The GEO Carbon and GHG Initiative;
 - WG4: Ocean and Society; and
 - WG5: Agriculture and Food Security (GEOGLAM)



Countries have borders; Earth observations don't.

Barbara J. Ryan
Director, GEO Secretariat
Adapted from NY Times
September 2015

2017 GEO-XIV Washington DC, US

2018 GEO-XV Japan

Thank you

<http://www.earthobservations.org>



Twitter: @geosec2025 @barbararyangeo



Facebook: Group on Earth Observations

