**GEO Task Status Report**

March 23, 2015

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**(1) Title: IN-02-C1, Advances in Life cycle Data Management**

**(2) SBA Group: N/A**

**(3) Description (from current GEO Work Plan)**

Priority Actions

* Improve and coordinate data management approaches that encompass a broad perspective of the observation data life-cycle – from processing to modelling and visualization. Identify and implement recommendations for best practices
* Develop a GEO strategy for data quality assurance, building upon ongoing initiatives such as the CEOS Quality Assurance for Earth Observation (QA4EO). Start with space-based observations and gradually expand into in-situ observations. Support related calibration and validation (cal/val) activities
* Develop a GEO strategy for the long-term preservation and accessibility of Earth observation data and associated information and knowledge. Identify and implement the necessary recommendations and best practices, building upon existing long-term data preservation guidelines. Support campaigns for the digitization of observation databases. Promote the use of free software for observation database management
* Ensure the availability of accurate, homogeneous, long-term, stable, global geodetic reference frames as a mandatory framework and the metrological basis for Earth observation. Build upon the Earth System Spatial Grid (ESSG) as a new Earth system three-dimension grid and spatial framework for Earth data sets. Make synergies with the UN Global Geospatial Information Management initiative (GGIM)
* Build upon the (i) Data Integration and Analysis System (DIAS) to assess and document Earth datasets in cooperation with operational- and research- data centers; and (ii) European environment information and observation network (Eionet) to coordinate the delivery of timely, nationally validated, high-quality environmental data from individual countries

 **(4) Key Subactivities: TBW**

**(5) Addressed Needs:**

 Increased use of observations through advances in all aspects of life-cycle data management, integration, and data recovery and conversion. Removal of important data management deficiencies. Enhanced information extraction from historical, current and future source data..

**(6) Partners:**

TBWN

**(7) Duration and Phases:**

N/A, Continuing Activity

**(8) Activity Location:**

Global

**(9) Innovation:**

TBW

*Example taken from IN01C2 : The key innovation for development and coordination of space-based observations will be methods for distributing and utilizing large quantities of space-based data in the future. This will require approaches such as “Data Cubes” and low bandwidth solutions to support developing countries obtain access to critical data.*

**(10) Activity Outcomes**

TBW

*Example taken from IN01C2 : (a) CEOS currently operates 131 missions. 12 new CEOS missions were launched in 2014: Sentinel-1A (ESA/EC) , GPM+OCO-2+ISS-RapidScat+SMAP+ CATS (NASA), ALOS-2+Himawari-8 (JAXA/JMA), DMSP-F19 (NOAA), CBERS-4 (INPE/China), KOMPSAT-3A (KARI), Meteor-M N2 (Russia). 13 missions are planned for 2015 launch.*

*(b) CBERS ground stations in South Africa and Spain ready for CBERS-4 data.*

*(c ) New CGMS-CEOS Working Group on Climate is focused on an Essential Climate Variable (ECV) Inventory (www.ecv-inventory.com) developed by CEOS, CGMS, and WMO which includes 200+ data records. Future plans to expand this inventory to include in-situ data records.*

**(11) Value Added:**

TBW

*Example taken from IN01C2 : There is a substantial increase in the amount of space data available to support global initiatives. With improvements in data access, cloud-based storage and processing, and pixel-based “data cubes” there will be a huge potential for new decision-making and outcomes. In addition, new free and open radar data (Sentinal-1A), and a mission dedicated to Soil Moisture (SMAP) will provide new and revolutionary datasets for public access.* ***SEE COMMENT BELOW***

**(12) Additional Uptake:**

 N/A

**(13) Planned or Proposed Follow-on Activities**

TBW

**(14) Describe the Funding Sources:**

TBW

CEOS Agencies funding missions and special projects

**(15) New IPWG Categories**

TBW

*Example taken from IN01C2 : It is strongly suggested that CEOS report on its efforts as defined in the CEOS 3-year Work Plan. There will be a large number of activities in the CEOS Work Plan that match directly with the construct of the Flagships, Initiatives, Community Activities and Foundational Tasks. In the past, CEOS has been responsible for tracking activities in in-situ data, foreign ground stations and other tasks outside of its normal leadership role. This has been extremely inefficient and detracts from the progress of CEOS tasks, as these areas are not part of the expertise of the CEOS management. The approach to future coordination and reporting needs definition and discussion to develop a sound plan for the future.*

*GEO Flagships: It is expected that GFOI and GEOGLAM would be GEO Flagship initiatives. In this case, CEOS would provide specific status updates on the space data provided for these activities and the status of special projects under CEOS leadership to support these activities. It is also expected that reporting for these Flagships will go directly to the assigned GEO lead.*

*GEO Initiatives: Similar to GEO Flagships, it is expected that CEOS would provide status report on space-based data and projects where it contributes to priority activities of GEO. These initiatives would be matches to CEOS initiatives within its 3-year Work Plan.*

**(16) Commitment**

TBW

*Example taken from IN01C2 : CEOS can likely commit immediately to support the new GEO Work Plan and Strategic Plan. There will need to be significant discussion and decisions regarding reporting and organization so that CEOS can have the largest potential impact on the GEO tasks.*

**(17) POC =**

Richard Moreno, CNES, WGISS chair (Brian.D.Killough@nasa.gov)

**(18) GEO Secretariat Contact:**

 Osamu Ochiai

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**Additional Comments on IN-01-C2 topics:**

(1) I would prefer to have the CEOS and space-based observations topic under one separate GEO task (IN-##).  Similarly, I believe GEO should separate the In-Situ topic into its own task (IN-##) in order to gain more visibility and allow someone to lead that area and promote global coordination.  In the past, CEOS had a RED and YELLOW progress tag for some time due to the link to In-Situ.  Until this area is better coordinated, I would prefer space-based observations be separated.

(2) I believe the Data Cube concept needs to be part of IN-01 (CEOS).  This is a problem directly related to the utility of space-based observations and is best coordinated and progressed through CEOS.  They are also the group funding and leading the effort.  I would not want this to be led by IN-02 (Earth Data Sets) or IN-03 (GCI) as they are focused on different initiatives.  But, there is a close relationship between the Data Cube work and these other tasks.  For example, the Nested Grid structure of the Data Cube is part of IN-02 and the Data Cube is definitely a new open source strategy for data management.  Our work through WGISS will make sure the results are reported through IN-02.  As for IN-03 (GCI), we are a long way from this becoming a "common infrastructure" and we need to work out a number of details before we could connect the Data Cube structure to the GCI.

**Comments on IN-03 (Promotion and Coordination of Space and Ground):**

(3) I am technically the IN-01-C3 lead, but none of that topical area is in my area of expertise.  I have typically called upon Ruth Neilan (NASA JPL) for updates on IN-01-C3 in the area of GGOS, so I will have to check with her on any new status updates.  Otherwise, I have nothing to report regarding the SAON, CAFF or CBMP groups.  After years of trying to reach out to these groups, I have never had any success regarding reporting or engagement.  I would propose the IN-01-C3 (promotion and coordination of surface and space) be removed from the work plan and be done by GEO as an overall coordination role among the various domains.