TASK-WA-08-01B: Runoff STATUS MARCH 2011

Task Description

Area	Water
Overarching Task	WA-08-01: Integrated Products for Water Resource Management and Research
Sub Task	WA-08-01b: Runoff
Related Communities of Practice	Integrated Global Water Cycle Community of Practice
Relevant Committees	-

Task Definition

Integrate, in a phased approach, dedicated river gauging networks of existing hydrological stations into a global runoff observation network. The main output of the HARON project (Hydrological Applications and Run-Off Network) will be strengthened in-situ and satellite monitoring networks of estuaries, rivers, lakes, reservoirs, and groundwater levels. **HARON Project Proposal is still unfunded**

Leads

Type	Member or PO	Implementing Entity	Contact Name	Email Address
Task Lead (PoC)	WMO	CLW	Wolfgang Grabs	wgrabs@wmo.int
Task Lead	Japan	University of Tokyo	Toshio Koike	tkoike@hydra.t.u-tokyo.ac.jp

Motivation / Background

(Why should this Task or sub-task be implemented? What relevance to society? What is the state of the art?)

The short- and medium-term benefits of HARON will be an improved overview of the freshwater resources of the world, thereby supporting water resources management and contributing in a cross-cutting fashion to all Societal Benefit Areas of GEO, while the long-term benefit will be to support the closure of the global water budget in line with requirements of the Global Climate Observing System (GCOS) and the Global Water Cycle Experiment (GEWEX). Complementary to the WHYCOS programme, HARON is designed specifically to facilitate a global understanding of the time and spatial variability of the principal components of the hydrological cycle.

The integration aspect of this subtask combined with the new integration subtask would contribute to the most comprehensive water cycle information available to the science community, water resource managers, and other decision-makers.

Current Status

Outputs

Description	By Date
A generic metadata standard format has been developed by the Global Runoff Data Centre that is in line with ISO and the WMO metadata standard. This is a backbone for the integration of metadata from various observation platforms.	Completed9
Working relationship established with Open Geospatial Consortium (OGC), working on an inter-operability exercise in hydrology. This is essential to be able to communicate with different hydrological observation networks on defined standards and protocols for data sharing	Q1 2010
Software tools developed for real-time polling and aggregation of global data from hydrological stations	Q4 2010
Core global hydrological network defined from cooperating countries	Q3 2010
Improved access to data and information of the hydrological cycle is being achieved through the WMO/GCOS sponsored GTN-H.	Ongoing

Activities

Description	By Date
4th Global Terrestrial Network – Hydrology (GTN-H) Coordination Panel meeting.	**Completed, report available**
Consolidation of initial in-situ network of gauging stations including available meta-data and commitments from National Hydrological Services for sharing data.	Q3 2010 → **Q2 2011** **Near completion**

Progress is sought on the outputs through voluntary contributions.	
Cooperation is sought with providers of data on lakes and reservoirs through the Global Data Centre on the Hydrology of Lakes and Reservoirs (HYDROLARE) that is being hosted by the State Hydrological Institute of the Russian Federation.	Q3 2010 → **Q4 2011** **On Track, activities on-going**
Through contributors to the Global Terrestrial Network Hydrology (GTN-H), plans are under way to develop concepts for integrated data products that focus on terrestrial observations of rivers, lakes and reservoirs and	On-going; defined as pilot projects In the GTN-H report (see above) **Actual Progress not satisfactory due to insufficient resources**

complementary space-based observations that allow monitoring updates on a monthly scale. Contributions from major research programs and earth observation systems are sought for this purpose.	
Project activities are currently being undertaken through in-kind contributions of WMO and the GEO Secretariat as well as global data centres that are hosted by Member countries. Extrabudgetary resources provided by Members or institutional donors have not been secured.	Project forwarded in response of GEO call for proposals; Project proposal forwarded to EU in Q3 2010 **Proposal Unsuccessful**

Resources

Description		By Date
Project proposal written, in-kind resources WMO	**On**	Q2 2010

Track	
Assembly of data and information, data management, in-kind from GRDC **On Track**	Q3 2010

In Planning

Outputs

Description	By Date
Access to Earth observation tools for water resource management, especially in developing countries. **Need improved definition on deliverables**	Q4 2011
Global and regional monitoring of the temporal and spatial variability of freshwater resources. **Need definition of tools, delay likely, Re-define output to water resources assessment**	Q4 2012
Interoperability of observing systems. **On track**	Q4 2011
Standardization of metadata for data sharing, and a broad global water cycle data integration system. **Achieved**	Q4 2010
Hydrological forecasts in water resource-management. **On track: Flood Forecasting Initiative and Flash Flood Guidance**	Q4 2012
New/better satellite techniques for water storage determination. **Initialized through cooperation CNES/LEGOS and HYDROLARE**	Q4 2010
Achieving an integrated approach to hydro-climatological monitoring activities that incorporates measurement of ground and surface water quantity and quality, and the application of new technology for measuring and managing surface water, groundwater, and water quality. **Needs improved definition of achievable deliverables**	Q4 2012

Activities

Description	By Date
See above	

Resources

Description	By Date
Seeking extrabudgetary resources for implementation **Progress limited**	On-going

except for forecasting projects	

Cross-cutting Components

Architecture and Data

1) Please briefly describe any task-related Earth observation resources (data set, system, website/portal) and any related Web Service interfaces that are contributed to GEOSS. State whether these items are or will be registered with the GEOSS Component and Service Registry for access via the GEO Web Portals, and whether any associated standards or other interoperability arrangements will be registered in the Standards and Interoperability Registry.

2) Please also describe what data and information your activity/system needs that you would request to be accessible through the GEOSS Common Infrastructure.

Capacity Building

(capacity building is defined to include the development of capacity related to: (i) Infrastructure and technology transfer (Hardware, Software and other technology required to develop, access and use EO); (ii) Individuals (education and training of individuals to be aware of, access, use and develop EO) and (iii) Institutions – building policies, programs & organizational structures to enhance the value of EO data and products).

1) In accordance with the above definition does this Task have a capacity-building component? If so, please provide a short description of this component including a description of end users.

2) Have any additional CB needs for this Task been identified? Please provide a short description.

The focus in capacity building activities lies in the transfer of know how and applications of advanced observation technologies including remote sensing, real-time data transmission communication technologies and their operational use and the operation of multiplatform observing system. End users are mainly the research and forecasting communities at global, regional and local levels, the latter resulting in an overall increased service delivery capacity of hydrological line agencies in member countries.

Science and Technology

1. Please briefly describe the elements of scientific research or technological development contained in this Task

2. In relation to the S&T component(s) of this Task, please describe gaps, priorities, continuity needs, barriers, scientific expertise and additional resource needs (this information will be used for developing a gaps and needs assessment in Task ST-09-01)

User Engagement

Please briefly describe to what extent end users are engaged in this Task and influence the nature of the outputs produced

Contribution to Outputs and Activities

CEOS

CNES:

(a) SOLS(Service d'Observation des grands Lacs par Satellites): Study the feasibility pre-operational lake water volume monitoring using available altimeter data

(b) HYSOPE(Hydrologie Spatiale OPErationnelle): Study the feasibility of NRT river and lake.

EC

CEOP-AEGIS: The final aim of the project is to develop a grid-based water balance and runoff model of the Qinghai-Tibet Plateau; mehods and results will be reported.

ESA

SOLS and HYSOPE.

Participation

Type	Member or PO	Implementing Entity	Contact Name	Email Address
Task Lead (PoC)	WMO	CLW	Wolfgang Grabs	wgrabs@wmo.int
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