

Sub-task Number: DA-09-02b

Sub-task Title: Ensemble-Technique Forecasting Demonstrations

Overarching Task: Data Integration and Analysis

Area: DATA MANAGEMENT

Relevant Committee: ADC

Related Targets: (to be included in 2009)

Sub-task Definition (as given in the 2009-2011 Work Plan):

Facilitate the development of demonstration projects promoting the use of ensemble-based techniques in disciplines other than weather forecasting.

Leads (GEO Member or PO, Entity carrying out the work, Contact: e-mail):

UK (Met Office), Point of Contact: Matthew Martin, matthew.martin@metoffice.gov.uk

Motivation/Background

A large number of sea surface temperature (SST) analyses are produced by various institutes around the world, making use of the SST observations provided by the Global High Resolution SST (GHRSSST) project. These are used by a large number of groups including: numerical weather prediction centres; ocean forecasting groups; climate monitoring and research groups. There is a requirement to develop international collaboration in this field in order to assess and inter-compare the different analyses, and to provide uncertainty estimates on both the analyses and observational products.

Outputs (e.g. products and services which result from the activities of the Task/sub-task; outlined in the form of deliverables with timelines)

Planned:

- Develop the GHRSSST multi-product ensemble (GMPE) production systems to improve robustness and quality, and to include new analyses as appropriate. 2009-2011.
- Continue scientific and technical dialogue between users and developers of the ensemble products. 2009-2011.

Produced (current status):

- A GHRSSST multi-product ensemble (GMPE) system has been implemented at the UK Met Office which takes inputs from various analysis centres on a routine basis and produces ensemble products.
- A GMPE technical advisory group has been set-up within the GHRSSST science team in order to manage the GEO DA-09-02b activity, which includes international operational teams working with global and regional EO SST data.

Activities (operations or work processes through which resources are mobilized to produce specific outputs; outlined in the form of milestones including timelines)

Planned:

- Hold meetings as part of GHRSSST science team meetings in order to manage the GMPE work, and produce reports based on these meetings.

Progress (current status):

- Planning is underway for a meeting in conjunction with the 10th GHRSSST science team meeting, to be held in June 2009.

[Note: Updates on outputs and activities will be formally provided twice a year, according to the GEO schedule for 2009]

Resources (indication of resources – e.g. financial, human – contributed by GEO Members or Participating Organizations to produce outputs)

UK Met Office contribute staff resources, and support for the IT and communications required to produce the ensemble products.

Relevant EC project:

GMES Marine Core Service MyOcean project.

Architecture and Data Component

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 Component

(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.

The task is contributing to building the capacity to enhance the value of EO SST data analysis products, through the inter-comparison and assessment of those products, and the production of a multi-product ensemble. The inter-comparison of the products will help to identify areas of improvement, which will help improve the individual analyses, as well as the ensemble product. The end users (numerical weather prediction centres, ocean forecasting groups, climate monitoring and research groups) will therefore benefit from improved SST analyses.

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

User Engagement Component

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

Users of SST analyses, and the producers of those analyses, are engaged in the task through the GMPE-TAG meetings which have been held. This engagement will continue in future meetings.

Science and Technology (S&T) Component

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)

Members and POs' Contributions to Outputs and Activities above:

(Input is optional. This section gives the chance to Members and POs to provide more details (3-5 lines) on their individual activities, making a clear connection with the Outputs and Activities outlined above).

Japan

JMA: Developed a 0.25 degree-mesh daily global SST product called MGDSST. In 2007, JMA joined GHRSSST-PP Multi-product Ensemble (GMPE) and started providing MGDSST GPV for GMPE on a real-time basis.

USA

NOAA: Facilitate the development of demonstration projects promoting the use of ensemble-based techniques in disciplines other than weather forecasting.

Participation (Table to be filled in 2009):

Type	Member or PO	Representing	Contact Name	EmailAddress
Lead(PoC)	UK	Met Office	Matthew Martin	matthew.martin@metoffice.gov.uk
Contributor	Germany	GKSS Forschungszentrum	Emil Stanev	emil.stanev@gkss.de
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