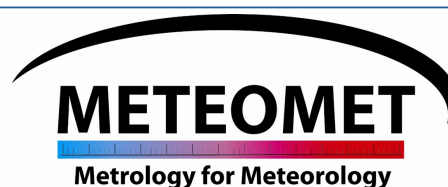


# JRPv03

## “Metrology for Essential Climate Variables”

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### Scientific and technical excellence

The project aims to improve metrological traceability for the Essential Climate Variables (ECVs) defined by Global Climate Observing System (GCOS): **water vapor** in upper-air and surface atmosphere, surface and deep **sea temperature and salinity, air temperature, precipitation, albedo, permafrost** temperature and **soil moisture**.

On the basis of results and experience achieved during the running **ENV07 MeteoMet Project**, this proposal introduces new activities and further objectives: from sensor calibration uncertainties to **measurement uncertainties, improvement of the developed devices** and their use **in field** oriented activities, new investigations on **sensor characteristics** for the generation of higher quality climate data extending the reach to address a wider set of ECVs, including fast changing ones.



### The vision

To establish a permanent cooperation between metrology and meteorology communities for the benefit of the future generations of climatologists.

*Better data today, for better reliability tomorrow.*

### Impact

#### Technology transfer and pre-normative research

- Provide links, input, and knowledge transfer to "end users".
- Carry on research on key standards, procedures and protocols in collaboration with appropriate climate and meteorology bodies.
- Develop a coherent European approach to be proposed to other Regional Metrology Organizations.
- Continue and extend those dissemination activities that allowed MeteoMet to win the EURAMET Impact Prize 2013 .

### JRP Participants



- This project has been written in close collaboration with key international stakeholders.
- The **GCOS-GRUAN** established a sub group to supervise and address part of this protocol.
- The **Management Support Unit** working for MeteoMet will keep on assisting the large consortium of this JRP.

### Relevance to the Objectives of EMRP

#### Integration and Efficiency:

A collaborative and multidisciplinary and interdisciplinary research for a common response of European NMIs to the societal and stakeholders needs .

#### Developing metrology capacity:

- To enlarge the NMIs expertise moving from the laboratory calibration to measurement uncertainty evaluation in land, air and sea practical field conditions.
- Develop measurement devices and calibration procedure for fast changing quantities
- Traceability for ECVs observable in extreme environments (high mountains and deep ocean).

#### Stimulate innovation:

The involvement of metrologists in studying sensors for ECVs will increase the capacity of manufacturers in producing instruments with adequate metrological characteristics.

#### Involvement of outside researchers:

- Researchers from GRUAN, oceanographic laboratories, universities and manufacturers will be actively involved in the project progress and results evaluation.
- **REG** from *Universitat Politècnica de Catalunya* will bring external high level expertise in the field of sea-related ECVs measurements.

### Collaborators

Based on the fruitful liaison achieved during the ENV07 MeteoMet JRP, this project aims to enforce the existing collaborations and establish new ones. More than 30 MeteoMet collaborators agreed to continue and extend their connections and activities: this new proposal received 37 support letters.