BRAIN-be
Belgian Research Action through Interdisciplinary Networks

PAMIR

A Portal to Atmospheric and Marine Information Resources

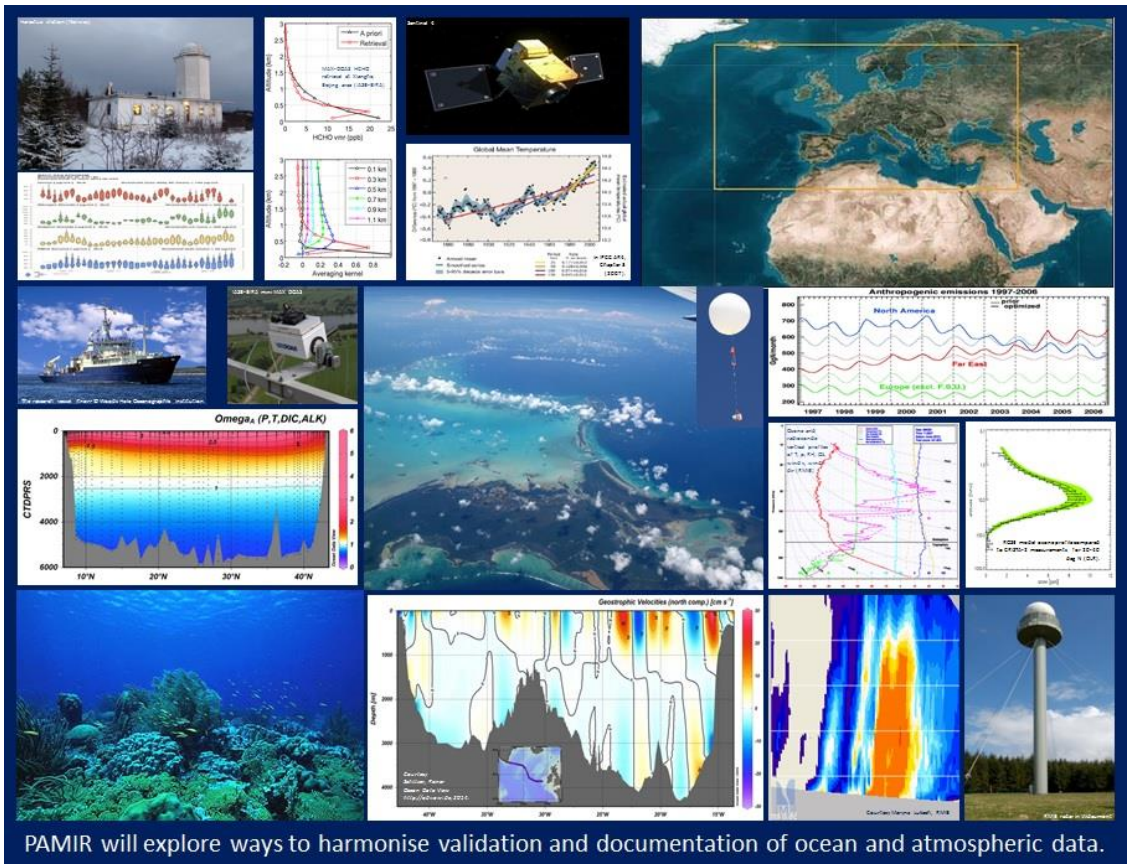
DURATION
01/12/2013 - 29/02/2016

BUDGET
347.409 €

PROJECT DESCRIPTION

The purpose of the PAMIR project is to explore common and specific aspects of atmospheric and oceanographic data validation and documentation in order to generate harmonised practice guidelines and tools in compliance with international standards. Its objectives include the elaboration of a validation protocol and a metadata scheme virtually applicable to any scientific atmospheric or oceanographic dataset, with the purpose of providing Belgian federal scientific institutes with a consistent common framework to validate and document such data holdings.

It is in the nature of terrestrial physical processes to deploy themselves in the full four-dimensional spatiotemporal space. Variables describing the oceans and atmosphere extend along time and the vertical as much as over horizontal dimensions. The pressure gradient along the vertical is one of the major triggers of movement and chemical transformation of water and air masses at large scales. As for time, it is embedded in the notions of movement and transformation themselves. Moreover, by definition, monitoring changes in the Earth system (e.g. climate change) implies taking time into consideration. Based on actual examples, this project will explore the current possibilities of representing fully 4-dimensional Earth datasets, or datasets essentially depending on the vertical and/or on time, in the INSPIRE formalism (see below), primarily designed to support the representation of data depending on longitude and latitude.



PAMIR will explore ways to harmonise validation and documentation of ocean and atmospheric data.

PAMIR

Through linking together Earth observing systems around the world, the Global Earth Observation System of Systems (GEOSS), under the umbrella of the Group on Earth Observations (GEO), aims at providing decision makers worldwide with a wide range of information and decision-supporting tools in nine *societal benefit areas* (SBA), namely disasters, energy, agriculture, biodiversity, ecosystems, health, climate, water and weather, of which PAMIR addresses the latter four. In this prospective, data validation and data quality are of crucial importance. Driven by the wish to enable users to assess the extent to which some given scientific information is *fit for purpose*, the Quality Assurance Framework for Earth Observation (QA4EO), endorsed by the Committee on Earth Observation Satellites (CEOS), contributes to this endeavour by striving for harmonisation and dissemination of best practices in use in the Earth Observation (EO) communities, and by providing guidance in this area. Europe contributes to the GEOSS through programmes of a wide stature: the European Global Satellite-Based Navigation System Galileo, the Programme for the Establishment of a European Capacity for Earth Observation Copernicus, and the Infrastructure for Spatial Information in the European Community Inspire. A key driving factor of the project, the INSPIRE Directive entered into force in 2007. Its scope includes any dataset which possesses a geographic extent or is related to some geographic location. Its double objective is to harmonise such datasets over the European continent and to make them available to the community (citizens, administrations, environment agencies, universities, research institutions, hospitals, doctors, policy makers, etc.) all over Europe, through a network of information facilities. The *data themes* targeted by INSPIRE, of a wide diversity, are listed in three annexes to the Directive. Items 13, 14 and 15 of Annex III are respectively *atmospheric conditions*, *meteorological geographical features* and *oceanographic geographic features*. The INSPIRE Directive is completed by a series of regulations addressing practical aspects of datasets and associated services. One of these, the INSPIRE Metadata Regulation defines the minimum mandatory information (or *metadata*) expected to be provided along with any dataset. PAMIR will endeavour to bring its stone to this edifice by developing a validation protocol in accordance with the QA4EO principles and a metadata scheme compatible with the INSPIRE requirements. More specifically for the marine environment, which falls directly under the responsibility of the federal government, the project will improve its capacity to comply with the reporting obligations set by the Marine Strategy Framework Directive.

The project methodology will consist of

(1) dressing an inventory of resources and practices in use in each partner's community;
(2) derive common principles applicable to the considered fields of research and identify domain-specific features;
(3) build up consistent conceptual systems compliant with international standards;
(4) test the validity of these systems against a couple of use cases per discipline;
(5) design and develop practical instruments underpinned by these conceptual systems;
(6) integrate these into the project web portal.

Practical deliverables include the project web portal and its integrated information and tools, namely a generic data validation protocol, a template for data validation reporting, an overarching metadata scheme, a metadata editor and a searchable catalogue. The latter two will be demonstrated on selected use cases borrowed from meteorology, aeronomy and oceanography. They are intended to be further populated with metadata relating to the targeted data collections. The metadata scheme and editor will be developed in compliance with the INSPIRE Metadata Regulation and, when fully developed, the PAMIR portal will link to the INSPIRE geo-portal.

CONTACT INFORMATION

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LINKS

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