



Newsletter

2009

September

GlobWave – An ESA Initiative



GlobWave is an ESA initiative to improve the uptake of satellite-derived wind-wave and swell data by the scientific, operational and commercial user community. The project covers the development of an integrated set of information services based on satellite wave data, and the operation and maintenance of these services for a demonstration period.

The project, funded by ESA and CNES kicked off in January 2009, and will run for three years.



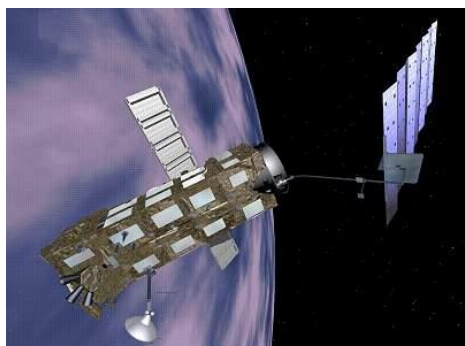
After a successful User Consultation Meeting in September 2007, the project commenced with the first phase focusing on the development of an initial set of products and services accessible to the wave user community via a dedicated web portal. The next open User Consultation Meeting is planned for April 2010 at Ifremer (Brest, France).

Satellite Data Products

GlobWave will allow easy access to a harmonised set of Altimeter and SAR wave products with a uniform error characterisation.

Altimeter Level-2-Preprocessed wave products will be available from ERS-1, ERS-2, Envisat, Topex/POSEIDON, Jason-1, Jason-2, US Navy GEOSAT and US Navy/NOAA GEOSAT Follow On.

SAR Level-2-Preprocessed wave products will be available from ERS-1, ERS-2 and Envisat.



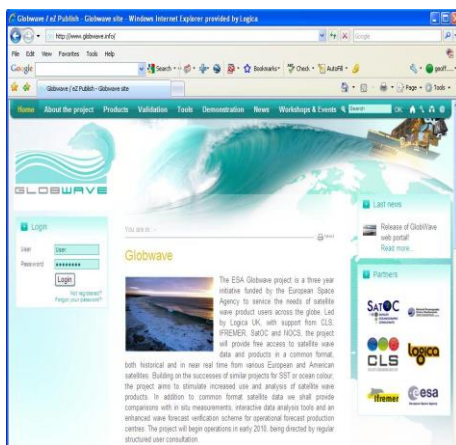
ESA's Envisat Satellite

The full historical archive from each satellite will be made available. Near real-time data will be provided within 1 hour of us receiving the data from the relevant agency.

GlobWave Web Portal

The Web Portal, launched in February 2009 is a user interface for GlobWave services and products. Our aim is to develop this site to become a single point of reference for satellite wave data and associated calibration and validation information.

The portal will enable access to satellite wave data sets, a directory of different sources of wave data including their main characteristics, online tools providing graphical and statistical diagnosis based on comparison between satellite data streams and *in situ* data, and a handbook for new users providing information on the characteristics of the various types of satellite wave data and how to access and utilise them.



Snapshot of the GlobWave Web Portal

GlobWave will enable inter-comparisons of SAR and Altimeter wave data with collocated *in situ* measurements, and cross characterisation between different satellite data streams, and between satellite and wave model data from different sensors, and combinations of model and satellite data.

Register as a User at www.globwave.info to access additional information, provide opinions and recommendations, and receive regular updates from the project team. There is also a blog area to liaise with members of the User Community and the Project Team will be more than delighted to hear from you.

Progress and Forthcoming Schedule

We have achieved our first two milestones, having consulted extensively with the User Group and performed the detailed specification of the initial products and services to be delivered by GlobWave.

Historical wave data from each satellite will be available in early 2010 along with online tools, inter-comparisons between satellite and *in situ* data, and a handbook for new users to better utilise the products and services available. Near real-time from each satellite will follow the delivery of the historical archives.

Project Consortium

The project is led by Logica UK with expertise from SatOC, CLS, Ifremer and NOCS.



Each brings experience that is vital to the success of the project in defining products that directly meet user community needs.

Steering Team and User Group

The project team are guided through the development with the help of the Steering Team, who ensures the interests of the user community are met.

The Steering Team is made up of seven key members of the user community representing the operational, commercial and research areas. They monitor progress at vital milestones and consult with ESA providing recommendations for each phase of activity. They will be present at major development assessment points and have a say in refining the requirement baseline.

The User Group, comprising members of the user community who provided the initial requirements upon which the project is based, are engaged continuously to ensure requirements are refined and the system is tested. GlobWave is designed for the user community and we encourage you to participate and become a member of the User Group by registering on the web portal.

Demonstration Products

The GlobWave portal will provide a facility to archive and distribute demonstration wave products which are derived at least partly from satellite data, based on new techniques or new types of satellite data. An initial set of demonstration products have been proposed by the GlobWave Consortium and will become available over the first phase of the project. These are:

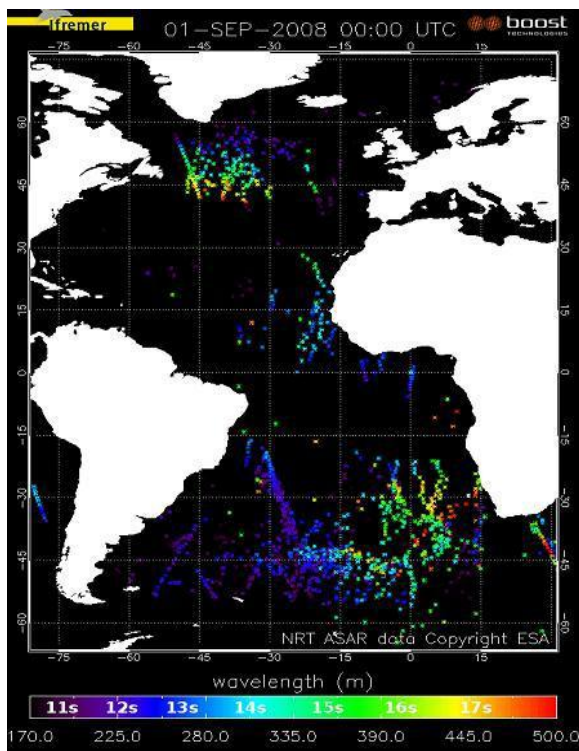
The **Altimeter Wave Period** product is designed to estimate empirically wave period from the Altimeter measurements using algorithms developed through research at NOCS. The accuracy of the average wave period is useful in open ocean areas where swell waves are not dominant.

The **Hs:Tz Scatterplots** product allows estimation of fatigue calculations as well as wave power, which is widely used in offshore engineering.

Soprano is an initiative by CLS to construct reliable wave products near coastal zones. The Soprano web site can be viewed at <http://soprano.cls.fr>

CLS has a product called **Fireworks** which constructs swell tracking animations using SAR snapshot observations and propagation algorithms. The figure below shows a snapshot of such an animation. The full animation can be viewed at:

http://cersat.ifremer.fr/data/view/movies/swell_animation_from_envisat_asar_instrument/atlantic_ocean



Snapshot of Fireworks Animations

We plan to grow the set of demonstration products available via the GlobWave Web Portal during the lifetime of the project and this will depend on members of the wave community working with us so that we can host some of their exciting research concepts!

So look out for an e-mail to the wave community outlining how to make proposals for additional demonstration products to be developed and introduced over the next phases of the project.

In-situ Data Used by GlobWave

A number of *in situ* data sources will be used as a starting point based on the geographic location, size of network and provision of quality checked data.



Google Earth Views of In Situ Data used by GlobWave (POSEIDON - purple, OPPE - red, UKMO - green, Meteo-France - blue, NODC - yellow, CDIP - green, MEDS - orange)

The initial data will be provided by:

- **POSEIDON** network operated by the Hellenic Centre for Marine Research (HCMR) in the Greek seas.
- **Puertos del Estado (OPPE)**, with several measurement networks in regional Spanish waters.
- **UK Met Office**, who own a network of buoys covering areas in regional UK waters and the Atlantic Ocean.
- **Meteo-France**, who own a network of buoys covering areas in the Mediterranean Sea and Atlantic Ocean.
- **NODC** - the National Oceanographic Data Centre operates several hundred US-owned buoys across the world.
- **CDIP** - the Coastal Data Information Program maintains a buoy network in the Eastern Pacific and Western Atlantic.
- **MEDS** - the Marine Environmental Data Services have a buoy network covering the Canadian waters.

The project will strive to ingest more *in situ* data sources. Contact [Geoff Busswell](mailto:geoff.busswell@logica.com) to find out how your organisation can contribute.