

# Aquaring

Bringing  
European resources  
on the aquatic world  
to you

[www.aquaringweb.eu](http://www.aquaringweb.eu)

AQUARING



# What is AquaRing?

**AquaRing** is co-funded by eContentplus, the European Commission's four-year Community programme to make digital content in Europe more accessible, usable and exploitable.

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**AquaRing** is a European project to set up an innovative semantic demonstration portal for digital content on the aquatic world. Its content is provided by Europe's aquariums, natural history museums and science centres.

The goal of this demonstration online resource, co-funded by the European Commission, is to allow access to a wealth of multimedia digital material and documents on the aquatic world, with a particular focus on sustainable use of the world's oceans. The portal will make use of innovative, multilingual semantic web technology to facilitate intuitive access.

By March 2009, the **AquaRing** portal will allow access to information on the aquatic world in the form of:

- images, videos, audio files
- interactive software and e-books
- digital collections
- databases
- articles, theses, papers and dissertations

**AquaRing** will be available to anyone looking for information on the aquatic world. Its wide range of images, videos, articles and interactive material will make it a great resource for the general public.

Parents of young children in particular will find lots of pictures, videos and activities to satisfy their youngsters' curiosity. The resource will also lead teachers and lecturers to much academic material which will help them better plan their lessons.

The media will be able to use the data for background information on aquatic environments, but also access essential contact information to get them in touch with experts on the aquatic world.

**AquaRing** will also allow access to a host of communication tools and exhibit information of interest to managers and staff of aquariums, natural history museums and science centres.



# AquaRing for the professional

A user-friendly way to bring  
your documents  
out from the depths

02

## Reaching out across Europe

For Europe's science centres, museums and aquariums, but also for other scientific and educational institutions, **AquaRing** offers an opportunity to reach a much wider audience.

The **AquaRing** portal, initially developed as a demonstration tool, will become an innovative semantic online source of digital documents on the aquatic world. Content providers will therefore be able to make themselves known to potential visitors, and professionals in the sector, from all over Europe and further afield.

## Making the most of your digital documents

**AquaRing** will breathe new life into archives of digital documents and collections. Many institutions are sitting on a wealth of valuable and fascinating digital content, which is currently unavailable to the general public. The portal is an opportunity to open up these resources, making them easily searchable to people from across the globe interested in the world's aquatic environments. The portal makes contributions from scientists more easily accessible to the enlightened amateur, for example, or allows aquariums, science centres and museums to re-use interactive materials initially created for set-term exhibitions.

## Conceptualising your content

For its multilanguage search engine, **AquaRing** will make use of semantic web technology, an emerging standard for the current

generation of Internet users approaching a Web 3.0 paradigm. This technology puts the user's interests at the heart of the process through a conceptual search method.

The digital contents (pictures, videos, documents, etc) are annotated with metadata – data about the data – using the most relevant existing classification systems and keywords on the aquatic world. This allows the search engine to retrieve content based on conceptual associations.

In other words, **AquaRing** will provide not only what the user is looking for, but also brings up other related content which may be of interest. For example, a search for "salmon life cycle" will bring up first and foremost images, video and other documents directly related to this subject, but will also use concepts to find related information, such as documents on how salmon are farmed, or anatomical details, or the environment where they live. As a result, contents made available through **AquaRing** semantic portal have a much wider potential audience.

Annotating your digital content with this metadata allows you to catalogue your documents intelligently, in a way which is compatible with many other documentation retrieval systems.

# AquaRing for the public

An intuitive  
and diverse  
source of inspiration

03

## One portal – many sources of information

**AquaRing** will bring together a wide array of digital resources from aquariums, science centres and museums all over Europe. Additional content providers are joining the project, increasing the availability of resources. The emphasis is very much on a diversity of sources, themes and formats, aiming to ensure you find what you are looking for.

## New content

- Much of the material available through **AquaRing** has not previously been available to the public. The **AquaRing** portal therefore opens up a wealth of new material, which becomes increasingly richer as contributors pool their resources.


## An intelligent interface

- **AquaRing**'s use of semantic web technology not only points you to what you are looking for, but also brings up related material of interest. Material on **AquaRing** will be accessible both by search engine and by browsing through the available themes, giving you the most user-friendly interface possible.

## A multilingual system

Material in a wide range of languages will be easily searchable thanks to the multilingual nature of the search engine. This way, the language you use to search will not restrict the potential contents you can access.

The interface will initially be available in six languages at its launch: English, French, Italian, Spanish, Dutch and Lithuanian, with the possibility for future expansion. Some content in German is already present.



# The structure of the AquaRing project

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## The consortium

The **AquaRing** project was launched in 2006, funded by the European Commission's eContentplus programme. The consortium of nine partners was brought together on the strength of their previous work in the domain. The five prestigious institutions from across the European Union whose digital documents would provide a starting point for the content of the **AquaRing** portal also provided scientific expertise and know-how on managing documents. Two high-profile technological partners were designated in order to bring the semantic web technology together with the infrastructure to support it. An academic partner was assigned the evaluation of the project and the development of innovative evaluation tools, and the European network of science centres and museums took care of the dissemination.

## The development process

This project is distinct in that the scientific partners responsible for the portal's content have been working very closely with the technological partners at all stages of the development of the portal. An analysis of user needs, demand and intellectual property rights was launched, while partners analysed their existing collection of digital documents. After a close collaboration with the most relevant international scientific networks in the field, decisions were made on the way the documents would be tagged and the way the digital content would be structured, as well as what the key features of

the site would be. Work is then focused around the development and feeding of the portal itself. Meanwhile, a dissemination campaign was launched which focused around the promotional website, two project workshops and a final event in March 2009 for the public launch of the portal. Evaluation is carried out at several key milestones, providing guidance for the project.

## Key stages

- October 2006:  
Project launch
- 
- November 2007:  
First project workshop
- 
- June 2008:  
First prototype
- 
- September 2008:  
Second project workshop
- 
- January 2009:  
Final prototype
- 
- March 2009:  
Public launch of the portal

# Partners involved in AquaRing

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The Aquarium  
of Genoa

—  
[www.acquariodigenova.it](http://www.acquariodigenova.it)  
—

Built for Expo 92, the Acquario di Genova is also an educational, scientific and cultural centre. Its mission is to educate and raise public awareness as regards conservation, management and responsible use of aquatic environments. It welcomes over 1.3 million visitors a year.

The Acquario di Genova is co-ordinating the AquaRing project. It also provides scientific expertise and a great deal of content for AquaRing, including documents, images, academic content and interactive online courses, via its Online Resource Centre.



Nausicaa  
the French National  
Sea Experience  
Centre

—  
[www.nausicaa.fr](http://www.nausicaa.fr)  
—

Nausicaa, France's Centre National de la Mer was designated as a Centre of Excellence by the Intergovernmental Oceanographic Commission of UNESCO in 1999 for its work in raising public awareness of the need for better management of the ocean's resources. It also co-ordinates the World Ocean Network.

As well as scientific expertise, Nausicaa provides AquaRing with databases of marine research, hundreds of thousands of images, reports of scientific expeditions, a collection of videos and 30 thousand digital documents on water resources and marine science.



Royal Belgian  
Institute of Natural  
Sciences

—  
[www.naturalsciences.be](http://www.naturalsciences.be)  
—

Founded in 1846, the RBINS is a Belgian federal institute. A high level research institute as well as a museum, it houses an exceptionally rich zoological collection, alongside prehistoric items, a mineral collection and many databases. The Institute has a total of 36 million biological and geological specimens and has a long experience in providing the greater public with up-to-date knowledge on natural history.

The RBINS is supplying AquaRing with digital resources that mirror its missions, such as research-derived documents (reports, posters, presentations, images, databases, etc) and products resulting from its exhibitions and educational activities (movies, interactive products, didactic files, etc). The RBINS further provides its scientific expertise in the field of aquatic sciences to the project.



## Rotterdam Zoo

www.rotterdamzoo.nl

Rotterdam Zoo is a non-profit public zoo and aquarium. Beside education the zoo aims to contribute to nature conservation and applied scientific research. Since the opening of the 7-million-litre public aquarium, the Oceanium, in June 2001, the Zoo has attracted about 1.5 million visitors a year.

The team at the Zoo provides scientific expertise for AquaRing, and supplies AquaRing with scientific data and findings, educational content, images, materials and interactive educational software.



## Lithuanian Sea Museum

www.juru.muziejus.lt

The Lithuanian Sea Museum is located in a former 19th century fort surrounded by the Curonian Lagoon and the Baltic Sea on three sides. The museum is a multiple maritime complex. Its collections host a wide range of exhibits: marine nature and navigation history exhibits, fish aquariums, sea mammals, and an ethnographic fisherman's farmstead. It welcomes 400 000 visitors per year.

The Museum contributes scientific expertise to the AquaRing project, as well as a wide range of images and videos, scientific articles, publications, documents and databases.

LIETUVOS JŪRŲ MUZIEJUS  
LITHUANIAN SEA MUSEUM

## Ecsite the European Network for Science Centres and Museums

www.ecsite.net

Ecsite is the European-wide network organization that links all major science centres and museums, natural history museums, zoos and aquariums in Europe as active members. The common thread uniting all Ecsite members is a commitment to public engagement to communicate science through accessible, interactive exhibits and programmes.

Ecsite is responsible for informing the public about AquaRing, for getting new partners involved and for ensuring the resulting impact of the project.



## Softeco Sismat SpA

www.softeco.it

Softeco Sismat SpA is an independent company established in Genoa in 1979. It is a major supplier of software and IT solutions for industry and business partners.

The role of Softeco Sismat SpA is to provide the infrastructure which makes it easy for AquaRing users to search for and access information which comes from a number of sources, in a variety of formats.



## Fundación Robotiker

www.robotiker.com

ROBOTIKER-TECNALIA is a private, non-profit foundation, located in Spain (Zamudio and Madrid) and Chile, integrated in TECNALIA technological corporation. Its aim is to contribute to Society Sustainable Development through Research and Technological transfer.

ROBOTIKER-TECNALIA provides its scientific background on semantic technology in order to annotate contents in AquaRing and extract knowledge thanks to semantic search and navigation tools. It also oversees the multilanguage aspect of AquaRing, regarding user interface, annotation, search, access and knowledge extraction.



## University of Genoa, Department of Anthropological Sciences

www.disa.unige.it

The University of Genoa's Department of Anthropological Sciences is divided into three sections: sociology, psychology and anthropology. The staff is involved in education as well as research activities and evaluation analysis.

The Department of Anthropological Sciences is responsible for the evaluation of the impact of AquaRing, both for its users and for the science centres, museums and aquariums which supply its content. Furthermore, the Department is responsible for the development of an innovative tool to evaluate the educational effectiveness of various institutions.



UNIVERSITÀ DEGLI STUDI DI GENOVA

## New additional content providers are also joining the Consortium!

The structure of AquaRing is open by definition and new content providers are welcome. The project framework and the metadata structure are available for additional partners who would like to share their knowledge and digital resources with a broader audience.

## Project website

[www.aquaringweb.eu](http://www.aquaringweb.eu)

## AquaRing

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## For further information contact :

Bruna Valettini,  
Acquario di Genova  
Area Porto Antico, Ponte Spinola,  
16128 Genova, Italy  
Tel. 0039 010 2345268  
fax 0039 010 256160  
[bvalettini@acquariodigenova.it](mailto:bvalettini@acquariodigenova.it)

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[www.designlab.be](http://www.designlab.be)

# Further information on AquaRing

**LARVA:**  
si fissa sul fondo ed  
assume la forma di  
**POLIPO**

**LARVAE:**  
it attaches itself to the seabed and takes  
the form of **POLYP**

AQUARING

