

4SEAS - The project

Concepts and background

More than 70% of the globe is covered by water, and Europe itself is bordered by four different water basins (the Atlantic Ocean/North Sea, the Mediterranean Sea, the Baltic Sea and the Black Sea) that have been shaping and influencing European cultural, social and economic heritage since ancient times. Seas are the paradigm of cross-cutting approaches to knowledge and life. Each topic overlaps with the others, and they can all be related both to the opportunities that seas offer to mankind and to the threats that mankind poses to the seas. The interactions of these topics embrace and influence most aspects of everyday life, and seas are appealing and fascinating. Therefore, seas are ideal tools for engaging and communicating with the public at large even on otherwise complex and “unattractive” themes.

4SEAS – Synergies between Science and Society for a Shared Approach to European Seas is a 7FP CSA-CA project by a consortium mainly comprising science museums and research centres committed to perform research and/or to communicate science and culture related to the marine realm. Participants are located on the coasts of (or in close proximity to) the 4 different European basins (Genoa – Mediterranean Sea, London - Atlantic Ocean/North Sea, Gdansk – Baltic Sea, Sevastopol – Black Sea). 4SEAS aims at enhancing the interaction between S&T and society at large, providing coordination of science communication activities with particular emphasis on marine-related topics. 4SEAS applies a bottom-up strategy so that the public is requested to express its views at several points throughout the project.

Strategy

4SEAS is centred on the following actions:

- Direct engagement of the public at large
- Selection of appropriate marine-related topics
- Cooperation between science centres and science museums
- European dimension of exhibitions
- Design of marine-oriented side-events
- Open access web-site dedicated to the project
- Adequate promotional side-actions

Objectives

Objectives deriving from the above list of actions are:

- To ensure visibility and dissemination of research results to a wider audience
- To enable the public to express its point of view and concerns about science
- To promote science to the young through the use of appealing languages and examples
- To strengthen the European citizens' sense of participation in Europe through their direct involvement in the project
- To develop a European awareness of the marine environment, including both cultural and technological aspects
- To promote the regional approach within a broader context of the European dimension

➔ **At the end of 4SEAS, two years after its beginning, we can proudly say that all the above mentioned strategies and objectives have been fully accomplished.**

4SEAS – Work performed and main results achieved

4SEAS has set up a dedicated website and organised 3 different permanent exhibitions (in Genoa, Sevastopol and Gdynia), plus a series of Nature Live events (in London). Further, it has produced almost 50 different side events and delivered over 50 multimedia products. Over 110.000 people have been directly engaged in its activities. A much larger audience has been exposed to 4SEAS, be it via its promotional activities or while visiting the hosting institutions albeit not specifically the 4SEAS sections. Of these, approximately 3,500 have been involved in the preliminary survey aimed at identifying the perceptions and expectations of our future audience concerning science, marine sciences and seas. Our exhibitions and side events have been designed on the outcomes of this survey. Further 4.000 responders took part in our impact assessment questionnaires, during the actual performance of exhibitions and side events. In the period September 2009 - February 2010 alone, over 5.700 people have surfed the 4SEAS website, visiting approximately 32.000 pages in total. More than 50 external actors, not directly linked to 4SEAS, have played a role in its implementation by novel or strengthened cooperations. The feedback obtained from the 4SEAS audience is very positive (over 90% of responders are satisfied or very satisfied, and 67% of adult responders - 60% of kids declare they are now keen on spending more time on science). This confirms that the project has fully achieved its ambitious expectations.

Each 4SEAS activity has been designed to produce an impact on the audience, and to be used for the audience. All the products (mostly multimedia) that remain at the end of the project will be kept available to the wide audience at the museum's locations, on their institutional websites, on the 4SEAS website and/or through external actors that have cooperated and will further circulate them. All this will grant a multiplier effect beyond the project's life.

Important Note:

All iconographic material relative to 4SEAS can be reached via the 4SEAS website www.4seas.eu. A full-colour booklet summarising the 4SEAS project is reachable here: <http://www.4seas.eu/read>

4SEAS – Additional material

4SEAS logo



4SEAS pictures

Pictures displaying 4SEAS activities are shown on 4SEAS website in the Multimedia area. A selection of 4SEAS pictures are reported here below.

A full-colour presentation booklet about 4SEAS is available at: <http://www.4seas.eu/read> along with a printer-friendly version.



4SEAS exhibition, side events and multimedia at the Galata Maritime Museum in Genoa (Italy).



4SEAS exhibition, side events and multimedia at the Gdynia Aquarium/Sea Fishery Institute in Gdynia (Poland).



4SEAS side events and multimedia at the Natural History Museum in London (UK).



4SEAS exhibition, side events and multimedia at the Sevastopol Marine Aquarium/Institute of Biology of the Southern Seas, Sevastopol (Ukraine).

The 4SEAS Consortium

The 4SEAS Consortium is composed by:

MuMa - Institution of Maritime Museums. Genoa - Italy. It is an institution of maritime museums and, besides participating in exhibitions, has been the co-ordinator of the project.

MuMa - Istituzione Musei del Mare e della Navigazione
Galata Museo del Mare
Calata de Mari 1 - Genova 16126, Italy

Representative: Pierangelo Campodonico

www.galatamuseodelmare.it

fourseas@muma.genova.it

MuMa was created in 2005 to gather four important museums located in Genoa: the Galata Maritime Museum, the Pegli Naval Museum, the Commenda di San Giovanni di Prè, and the Open Air Museum. MuMa is a cultural centre of excellence tied to the world of seas and navigation, and is part of AMMM, the Mediterranean Maritime Museum Association. A reference point for culture and tourism, its centres and monuments express the very essence of Genoa's identity: geographic exploration, exchanges of trade and peoples, emigration and cruises. Able to rely both on private and public funds, MuMa organizes temporary exhibits conferences, and workshops. The 4SEAS project has been realized mainly in Galata Maritime Museum, the most important part of MuMa. Galata Maritime Museum is the largest and most innovative maritime museum in the Mediterranean area. Covering an area of 10,000 square meters, it tells the fascinating adventure of man and oceans, and describes the history of Genoa and its sea. Galata Maritime Museum is captivating for its ability to immerse the visitor in scientifically detailed, high quality reconstructions of an era, a type of ship, or the life and atmosphere that was lived on board.

Gaia - Studio Associato Gaia snc. Genoa - Italy. It is a small company founded by researchers that has provided internal dissemination and other services (public assessment, dissemination, promotion).

Studio Associato Gaia snc dei Dottori Antonio Sarà e Martina Milanese
Via Brigata Liguria 1/9 scala A - Genova 16121, Italy

Representative: Martina Milanese

www.studioassociatogaia.com

Studio Associato Gaia (Gaia) was founded in 2005 by Dr. Antonio Sarà and Dr. Martina Milanese, both Marine Biologists and PhDs at the University of Genoa. Gaia was created to integrate and formalize the capacities and expertise developed over the years working as University assistants and researchers. While Gaia still cooperates with the University of Genoa on these activities (which include statistical analysis of data, student tutoring, research project supervision, laboratory and field research, administrative work), new partners include other research centers, public bodies and SMEs. Dissemination activities both under the University supervision and on behalf of SMEs are also integral part of Gaia's present activities. Fields of interest include Marine Ecology, Marine Zoology, Aquaculture, Marine Biotechnology, Sustainable Exploitation of Sea Resources.

IEITGe - National Research Council CNR. Genoa - Italy. It is a research institution dedicated to the development of ITC technologies and has provided the technology platform of 4SEAS.

*Consiglio Nazionale delle Ricerche
Piazzale Aldo Moro 7 - Roma 00185, Italy*

Representative: Marco Ajmone Marsan

The National Research Council (CNR) is a public organization; its duty is to carry out, promote, spread, transfer and improve research activities in the main sectors of knowledge growth and of its applications for the scientific, technological, economic and social development of the Country.

CNR is distributed all over Italy through a network of institutes aiming at promoting a wide diffusion of its competences throughout the national territory and at facilitating contacts and cooperation with local firms and organizations. From the financial point of view, the main resources come from the State, but also from the market: even 30% of its balance sheet is the result of revenues coming from external job orders for studies and activities of technical advice as well as from agreements with firms, contracts with the European Union and with the other international organizations. CNR is a member of the European Research Consortium in Informatics and Mathematics (ERCIM), which has partners in 13 European countries, including Scandinavia and Central/Eastern Europe. Most are independent Research and Development laboratories with strong links to local industry. ERCIM partners have generated about 400 spin-off companies and do joint developments with SMEs. The activities of the Institute Istituto di Elettronica e Ingegneria dell'Informazione e delle Telecomunicazioni (IEIT) are focused on the ICT area. The Genoa Section of IEIT makes research on ICT, especially devoted to network security. We work both with passive methodologies, like firewall and protocol analysis, and active techniques, like intrusion detection and Prevention. We produced software opensource related to Virtual Private Networks (www.netvan.eu) and in the field of log analysis and worm and intrusion detection (<http://lma.sourceforge.net> , Worm Poacher and SMTPSniffer). We analyze and make practical research on problems like foot printing, network scanning and resource enumeration, access-gaining, privilege escalation, backdoors, tracks covering and others. Another field of interest is related to web services, stressing the characteristics of availability and load balancing.

NHM - the Natural History Museum. London - UK. It is one of the best known natural history museums and, besides participating in exhibitions, has provided discussion events to be filmed, edited and streamed.

*The Natural History Museum
Cromwell Road - London SW75BD, UK*

Representative: Alan Carr
www.nhm.ac.uk

The Natural History Museum (NHM), London opened on Easter Monday in 1881, but its origins go back more than 250 years, based on the collections of Sir Hans Sloane, which were given to the nation in 1753. These collections were housed in the British Museum, but as more collections were added, such as those of botanist Joseph Banks, who sailed with Captain James Cook aboard HMS Endeavour, it became clear that they deserved a museum of their own.

Today, the NHM is one of the largest in the world, housing over seventy million specimens of animals, plants, fossils and minerals. As well as the research carried out by some 300 scientists across the five

research departments (Zoology, Entomology, Botany, Palaeontology and Mineralogy), the Museum hosts 3.8 million (2007/8 figures) visitors a year to its galleries from the U.K., Europe and the rest of the world. Advancing public understanding of science is central to the NHM's work, an aim realised in the Museum's vision and mission:

NHM vision: to advance our knowledge of the natural world, inspiring better care of our planet.

NHM mission is: to maintain and develop our collections, and use them to promote the discovery, understanding, responsible use and enjoyment of the natural world.

SFI - Sea Fishery Institute. Gdynia - Poland. It is a marine research institution with public aquarium and, besides participating in exhibitions, has produced a video on marine research.

Morsky Instytut Rybacki w Gdyni
Ul. Kollataja 1 - Gdynia 81-332, Poland

Representative: Tomasz Linkowski
www.sfi.gdynia.pl

The Sea Fisheries Institute in Gdynia established in 1921 is the oldest marine and fisheries research institution in Poland. Its research activity is focused on fishery biology, fishery oceanography, marine ecology, fishery economics, fish processing technologies, food and environmental chemistry. The institute is an active participant in projects coordinated by the International Council for the Exploration of the Seas (ICES) and the European Union Framework Programs. It performs research necessary to realize the European Union Common Fisheries Policy, including the Polish National Programme for the Collection of Fisheries Data.

The Gdynia Aquarium is the marine educational facility of the Sea Fisheries Institute. It offers the collection consisting of more than 1,500 animals representing about 180 species from various world regions which is the largest collection of aquatic animals in Poland. The permanent exhibition and educational activities are designed to help visitors both kids, youngsters and adults to experience scientific discovery.

IBSS - Institute of Biology of the Southern Seas. Sevastopol - Ukraine. It is one of the oldest marine research centres in the world and, besides participating in exhibitions, has provided scientific video material.

AO Kovalevsky Institute of Biology of Southern Seas
Ukrainian National Academy of Sciences
Prospekt Nakhimov 2 - Sevastopol 99011, Ukraine

Representative: Valery Eremeev
www.ibss.org.ua

Institute of Biology of Southern Seas A.O. Kovalevsky (IBSS, Sevastopol, Ukraine) is incorporated into the Section of General Biology of National Academy of Sciences of Ukraine. Established in 1871 as Sevastopol Biological Station (SBS) and the first marine biological institution in Russian Empire, in the URSS period it was the leader in the Black Sea Marine Research, and was re-organised into IBSS in 1963 and re-affiliated to Ukrainian Academy of Sciences. Being the largest Ukrainian research centre in marine biology and ecology, IBSS focuses research on the variety of biological processes in different marine environments, their reservation and protection, studies of biodiversity

and dynamics of marine ecosystems, radioecology, new biotechnologies and integral management of marine coastal zones.

SMA - Sevastopol Marine Aquarium. Sevastopol - Ukraine. It is one of the oldest European public aquariums and, besides hosting the physical exhibition, has provided support for the development of web-based ones and for videos.

Sevastopol Marine Aquarium

Prospekt Nakhimov 2 - Sevastopol 99011, Ukraine

Representative: Alla Mihailovna Kravtsova

www.sevaquarium.com

Sevastopol Marine Aquarium Museum (SMA, Sevastopol, Ukraine) is one of the oldest European public aquariums founded in 1887 as affiliation of the SBS and the oldest in Ukraine. From the start SMA presented Black Sea Research by SBS, and was opened for the wide public to show the Black Sea fauna. Several times SMA totally or partly lost its collections; last time during disintegration of ex-USSR due to lack of financial support. Nowadays its alive collection includes 1,500 specimens of marine and freshwater fishes and 80 species of other animals. The number of visitors to SMA has increased from 16,000 in 1925 to 130,000 per year at present.

Structure of 4SEAS

The strategy of 4SEAS is to re-organise and re-think the role of science related to marine topics as a response to public engagement, and to re-discover the deep influence that seas have on European citizen's life. Accordingly, "science" has been interpreted to its broader meaning, including life sciences, social sciences, economy, technology and historical sciences.

The project has been conducted by partners located on four different seas bordering Europe, and offering different yet complementary approaches to marine sciences. Partners have interacted with each other to set up permanent exhibitions, side-events and virtual exhibitions. Dialogue with the public indicated the topics to be addressed, and each participant addressed them in a specific way yet within an integrated common framework. The extensive use of ITC technologies has made 4SEAS largely available to European citizens as well as to the wider international community, irrespective of their country of origin.

The project consists of 8 Work Packages (WPs):

- ▶ WP1 - Management and Coordination
- ▶ WP2 - ITC platform and website set up and maintenance
- ▶ WP3 - Public pre-assessment
- ▶ WP4 - Design of provisional exhibition programme
- ▶ WP5 - Exhibitions set up
- ▶ WP6 - Exhibitions, side events
- ▶ WP7 - Public assessment of impacts
- ▶ WP8 - Promotion, dissemination and achievement of self sustainability

WP 1 - Management and Coordination

Project management has been ensured by the Coordinator, supported by the Steering Committee for decision-making (established at the Kick-off Meeting in Genoa) and partner n. 2 for internal evaluation of performances and internal progress reporting. All deliverables pertaining to project management, project coordination and internal reporting have been timely released.

WP2 - ITC Platform and website set up and maintenance

ITC technologies play an essential role within 4SEAS for many reasons, ensuring connectivity among the partners by an *ad-hoc* network, a dedicated website, and the necessary ITC platform/equipment for interactive exhibitions/events. The website dedicated to the project is an integral part of the exhibitions themselves, providing access from any place located inside as well as outside Europe to the contents included in the archive (e.g. documents, videos, pictures etc.). Since September 2009, the 4SEAS web site has been fitted with an automatic statistics generator, in order to gain an overview of the web site access and use. According to this tool, the 4SEAS website includes 700 pages and more than 20 photo galleries. The number of uploaded videos (now 8) will progressively increase as the consortium deliberately decided to keep the web site appealing by posting new contents periodically, although they may be already ready (as are the more than 50 4SEAS videos). Since September 2009, the web site has been visited by over 5,700 people, who have surfed approximately 32,000 web pages in total.

WP3 - Public pre-assessment

The first step undertaken during the implementation of 4SEAS was to turn to our audience for advice. We asked them: What is your perception of seas? What is your attitude towards science, and

marine sciences in particular? Have you ever been involved in events dealing with oceans and/or marine sciences? What do we need the seas for? These, and many other questions, were circulated throughout Italy, Poland, Ukraine and the UK, eliciting our (potential) audience's response. Indeed, we wanted to define our strategy, identifying the best topics and methods to engage in the dialogue about science and marine sciences with the public. Our preliminary assessment consisted in two questionnaires designed for kids and adults. Having reached over 3,500 people, we gathered a huge bulk of information, and used it to identify the topics to be addressed in our exhibitions and side events, together with the best tools to address them. To our best knowledge, this was the first research ever carried out to directly address people's instinctive imagery, stereotypes and expectations concerning seas and oceans. Indeed, social and economic science researches dealing with people and marine issues have always investigated either the degree of knowledge on marine topics, or people's position towards a specific action or statement.

Feedback from kids was overall very positive to the initiative itself. Kids felt engaged and involved in an activity dealing with two appealing topics: science and seas. Teachers often seized the opportunity to set up dedicated teaching sessions that in some cases lead to unexpected side-activities (such as collections of drawings by kids about science and scientist). Both kids and teachers asked for further updates and engagement in the project. All the above shall be accounted as a first positive outcome of 4SEAS.

- ▶ In line with recent literature on the same topic, kids display a double attitude towards science: while acknowledging its importance and finding it fascinating for some aspects (probably influenced by appealing TV and movies stereotypes), they also consider science a difficult discipline and declare to be poorly attracted by S&T careers. Nevertheless, the opportunity for leverage stands right in the appealing aspects of science that should be exploited to engage an increasing number of kids. Indications obtained through the assessment suggest to organize hand-on and captivating experiences. Yet, the important role of institutional actors such as schools, museums and aquaria shall not be underestimated.
- ▶ Turning to adults (aged over 18), the assessment offered a broad cover in terms of age, gender, education and geographical distribution of respondents. In general, attitude towards science is very positive. Science is considered important and intrinsic to mankind, and the tool to achieve progress and well-being. Expectations are high, as science is called to solve most present-day problems in order to provide a better future for new generations. In the responders' view, scientists are the actors of such progress in spite of constraints like political and financial interests that try to redirect their research and to limit the dissemination of some results. In such a scenario, blame finally falls on rulers and major lobbies. Seas proved to be a good theme to attract the audience for the promotion and dissemination of science. Indeed, not only seas are appealing but also appear quite naturally linked to science thus offering a good opportunity for science outreach. As marine sciences are primarily perceived as natural sciences, there is a huge potential for the development of dissemination actions that address other fields of marine S&T. **Concomitantly, the general idea is that marine topics are poorly addressed in formal educational curricula, approximately one third of responders declaring not to be satisfied with the marine knowledge acquired at school. We believe this is a very crucial issue to be addressed, given the recent steps undertaken at the EU level concerning core strategies such as in the marine/maritime and education sectors.**

The three main lines of action of 4SEAS (physical exhibition, virtual exhibition and side events) were chosen following these results and to meet the audience expectations. Web, aquaria and museums are among the preferred means to obtain information about seas, while the expression of interest for further actions centers on direct engagement in hands-on and practical experiences.

WP4 - Design of provisional exhibition programme

4SEAS is centred on the dialogue between science and society. As a consequence, exhibitions programmes were designed following outcomes from the pre-assessment (WP3). The term “exhibitions” comprises a wide range of approaches: “standard” exhibitions physically placed in the institutions, virtual exhibitions and side-events. Public assessment provided the shared framework for each partner to follow. Within such shared framework each participant had the freedom to choose own appropriate topics and strategies, leading to a 4SEAS provisional exhibition programme.

WP5 - Exhibitions set up

The entire first year of 4SEAS has been devoted to preparatory activities for physical exhibitions, virtual exhibition and side events. Physical exhibitions have been prepared in Genoa, Sevastopol and Gdynia. As far as London is concerned, activities at the Natural History Museum have been focused on Nature Live events.

- ▶ The 4SEAS exhibition and events at MuMa were designed to engage in the dialogue between marine sciences and the public through an historical museum. Indeed, Galata Maritime Museum is dedicated to the history of the man and the sea. No wonder that it also displays the most relevant scientific achievements in the history of navigation, as well as in the history of the city and surrounding areas. In the 4SEAS context, therefore, our exhibit and side events talk about marine/maritime history and science, along with innovation, conservation, jobs, instruments and technology. That’s why the staff at MuMa decided to focus on *Environmental Disasters* as a leading theme, and built its exhibition around the well known Haven disaster that occurred in 1991, when the oil tanker exploded and sunk off Genoa. The exhibition offers a reflection about environmental disasters and marine pollution, and about the role of science in remediation and environmental education. It has been expressly conceived for the young generations, because the aim is to translate technical and scientific contents in an easy language, understandable by everybody, to launch an experience of social cohesion and scientific dissemination. The majority of the material that has been used in our exhibition are second hand materials. We have been personally searching for it in old warehouses and in the museum’s suppliers stores. Once we found something that could be suitable for the exhibition purposes, the recovering activity started. The cleaning session allowed for the recovering of all objects, including old PVC truck covers that are no longer used, old oil tanks, wooden articles and many other items and materials. Panels, title and name of the exhibition were all printed onto old PVC trucks covers cleaned and restored. We built out large workshop desk out of 12 old petrol tanks. The cleaning and recovery activity has been taken just outside the museum so that people could actually watch what we were doing. Therefore, a panel showing the 4SEAS logo explained that we were preparing an exhibition about the marine environment and marine pollution, and that we were recycling “rubbish” to use it for the exhibit.
- ▶ The Natural History Museum vision for our contribution to 4SEAS was to create a virtual exhibition. The Museum’s gallery spaces are driven by long term aims and priorities and it was impossible to install a static exhibition fulfilling the aims of 4SEAS. Instead, we elected to

design a “virtual exhibition”, a series of public events which would address some of the topics identified under 4SEAS. Taking an experimental approach, the discussion events would be based on a theme but dynamic in content in response to audience input. The Natural History Museum’s virtual exhibition was based on its *Nature Live* series of daily public interaction events (<http://www.nhm.ac.uk/nature-online/nature-live/index.html>). Nature Live is a science engagement program that takes place every day, and gives visitors to the Museum the chance to find out more about the science that goes on behind the scenes, and communicate directly to scientists and experts. As part of 4SEAS, a series of special Nature Live events were programmed, developed and delivered that focused on marine science, the research of the Natural History Museum, and the UK and EU seas featured in the project. Events were also designed that responded to the issues raised in the front-end evaluation that was conducted at the beginning of the project, addressing topics such as marine pollution and fisheries. Nature Live events are 30 minutes long, and take place in the Attenborough Studio, a state-of-the-art studio space within the newly opened Darwin Centre at the Natural History Museum. Events are facilitated by a professional science communicator, and will usually involve images, video clips, specimens and demonstrations. Audience interaction is integral to Nature Live, and therefore questions and comments are welcomed throughout the events, and time is given at the conclusion of each session for one-to-one discussions with the scientist speaker. Nature Live also participates in off-site activities, such as the Wembury BioBlitz (see below) and an evening event program called *Nature Live Nights*. These evening events are larger scale and longer, and will delve more deeply into topics allowing for a range of speakers from different backgrounds and organisations to debate with a general public audience. These events offered visitors to the Museum’s galleries an opportunity to interact directly with Museum scientists and with a specialist events hosted in a dedicated multimedia studio. Some of these events were filmed and edited to provide material which could subsequently be viewed by a wider, international audience via the 4SEAS website. We also envisaged at least one external event which would take our 4SEAS programme out of the Museum allowing us to interact with a wider public audience. The virtual exhibition model adopted at The Natural History Museum meant that for each event throughout the year, there was a separate planning and delivery cycle. Topics for our events were identified from the initial survey of public opinions from themes and events planned for inclusion by all the 4SEAS partners and also from the range of marine science undertaken at the Museum. In each case, a three-way planning dialogue between the scientific presenters, the Nature Live event hosts and the multimedia staff responsible for running the Attenborough Studio. Topics were researched and media and materials prepared for each event and for our outside events and evening event, this planning cycle presented a real logistical challenge. Following our events, materials and outputs were also used to enhance our content on the 4SEAS website.

- ▶ Being the marine research institution and marine educational facility SFI’s and Gdynia Aquarium’s intention was to develop an exhibition which would inspire the wide audience with a passion for the marine science and raise the awareness of the natural heritage both on the local and European scales. Our exhibition programme including a number of topics such as marine biodiversity, sea pollution, resources, eutrophication, aspects of biological invasions or species extinction was designed towards promoting knowledge on the marine environment and raising understanding of the importance and need of nature protection. Our intention was to design the exhibition and events in a way allowing the visitors to communicate with scientists and experience a real scientific discovery. Our conception was to achieve these goals through a permanent exhibition and numerous educational activities such as laboratory and field

workshops, lectures, presentations and outside events including educational excursions and sea cruises. Our aim was to direct the exhibition towards all age groups of people with special emphasis on children and young people from different parts of our region often located a long distance from the coast. A European dimension of our exhibition was planned to be realized by presence of sections dedicated to other European regions/seas and through the exhibition on-line where photos and informations provided in four languages could be available to a wide audience not only from Poland. Building our permanent exhibition required arranging exhibition space, purchase of exhibition tools such as monitors and wide screens, constructive elements for the exhibition, printing and framing the large-scale photo images and posters and installation of the sailor's chest. The permanent part of the exhibition was arranged in the main building of the Gdynia Aquarium. It consisted of three parts dedicated to the problem of sea pollution, eutrophication and sea waves. As such, a model presenting how long different kinds of trash do decompose in the natural environment, the three-dimensional model presenting the phenomenon of eutrophication and a dynamic model of wave's propagation were designed and installed and became an integral part of the existing exhibition of the Gdynia Aquarium. A movie entitled *The Baltic – a Sea Mystery* dedicated to the Baltic Sea, the mission and activities of the Sea Fisheries Institute, educational activities of Gdynia Aquarium and 4SEAS project was produced and installed on the 4SEAS and Gdynia Aquarium websites. The timetable and content of workshops, weekend events and other activities planned in the frame of the exhibition were fixed and informative materials about these events were prepared to be published in the local media. The timetable of the exhibition was compatible with programs and events fixed by other partner institutions and/or scientific happenings traditionally organized in Gdynia, such as the Baltic Sea Festival or Children's Day. 'Biodiversity', 'Wrecks', 'Monsters' and 'Marine fantasy' were selected as the most interesting topics for weekend events. Activities during these events were adjusted to both kids and adults so every family member could enjoy attending these events. A *Kids' area* was arranged in the Gdynia Aquarium where kids could meet marine animals and monsters, listen to marine stories and fairytales and take a part in artistic contests and games. Workshops planned to be a part of our exhibition were directed mainly towards school children and youngsters. Our intention was to reach children also from poorer parts of our region, we have, therefore, used the municipal's database and sent invitations to schools to attend 4SEAS activities. Organization of some outside events required cooperation with external partners. We have, thus, contacted Centre for Ecological Information and Education in Gdańsk, University of Gdańsk and Marine Academy Corporation. These institutions agreed to cooperate and contribute to events organization. Besides all these arrangements the exhibition on-line on the 4SEAS website with photos and informations provided in four languages was established. A link to this web page was created from the main website of the Gdynia Aquarium.

- ▶ 4SEAS gave IBSS and SMA the chance and new ways to engage in the popularisation of marine scientific knowledge, and to open the marine research to the wide Ukrainian public. Modern approach - use of multimedia and ITC technologies tools - gave possibility for direct dialogue between researchers and society, to present marine biology research knowledge in popular way and explicate its significance for sustainable development of society in inviolated ecosystem and to bring the knowledge to the society, about the complicated and fragile structure of the Black Sea marine environment to date, and thus increase society awareness and new generations to develop the maritime and coastal economy in a knowledge-driven way. Use of modern technology installation of wide screens in two permanent exhibition halls, where the 4SEAS multimedia was demonstrated, gave the possibility to bypass the shortage of free space in very

old SMA localities (built in 1887 / not rebuilt since 1950-s) and to fill the gap of permanent exposition – to show the amazing enormous world of marine micro-world and show the history of marine research and expeditions. The preliminary analysis of pre-4SEAS permanent exhibition in SMA, analysis of questionnaires data, and of scientific and popular literature and multimedia material on the Black Sea ecosystem helped develop the 4SEAS exhibition program by IBSS in SMA. This was also done to cover the gaps in SMA's presentation of the Black Sea marine life, ecology, scientific research by the production of video and multimedia presentations. Chosen for 4SEAS, the exhibition Live Black Sea allowed for using different strategies: live scientist presentations, art exhibitions and quiz, joint actions and conferences with biologists, ecologists, hydronauts and wide adult public and kids, demonstration of 4SEAS multimedia non-stop on SMA physical exhibition and on 4SEAS web-site. IBSS and SMA together elaborated a versatile 4SEAS exhibition programme which included different thematics oriented on wide public, kids, students, and adult audience. The exhibition was designed to address a number of shared 4SEAS topics, as established by the 4SEAS Consortium. Topics *marine scientists*, *one day at sea* and *threats* deal with several cross-cutting themes such as: biodiversity, fisheries, eutrophication, biological invasion, reserves, species extinction, aquaculture, expeditions, resources, jobs, pollution, animal/plant conservation, and human health. To produce 4SEAS videos and multimedia and to organize different actions and public conferences, 4SEAS IBSS team was organised from Researchers-Biologists of different expertise and experiences in a wide range of Marine Biology fields. IBSS team produced several multimedia information (videos and pictures) at the macro and microscopic levels, in the field and in laboratory conditions, during different seasons. Furthermore, they carried out archive work in the State Archives of Ukraine and Russia, with institutional and private collections. Old material was further rescued by means of transforming it into the multimedia files (digitizing and ameliorating the quality of old films and photos). As a result creative IBSS team of 4SEAS-minded marine biologists adopted a comprehensive approach, releasing numerous and cross-cutting multimedia products (videos, presentations, video-clips, photogalleries, web pages with videos and photos, etc). These were used during side events, each supposed to engage 30 - 80 people for discussion of different 4SEAS topics, marine biodiversity and marine research.

WP6 - Exhibitions, side events

Three permanent exhibitions dedicated to the seas and to marine sciences have been organised in Genoa, Sevastopol and Gdynia. Besides, a series of special Nature Live events has been performed in London (where permanent exhibitions were not foreseen, see Annex I). Overall, 4SEAS has produced more than 40 different side events and delivered over 50 multimedia products. These have been partially uploaded to the 4SEAS website, and will be continuously uploaded in the next months to keep the website alive and attractive. Over 110,000 people have been directly engaged in its activities (Year II). A much larger audience has been exposed to 4SEAS, be it via its promotional activities or while visiting the hosting institutions albeit not specifically the 4SEAS sections. Detailed information on the core of 4SEAS is available at: <http://www.4seas.eu/read>, where a dissemination booklet describing the project is available both in an environmentally-friendly printable version and in a full-colour (for screen-reading only) version. Further to the exhibitions mentioned above, the following side events and multimedia were delivered.

Side events and multimedia in Genoa:

- ▶ Workshop: marine pollution and sea cleaning - The workshop (replicated for five months in 2009) was dedicated to teachers and students, paying special emphasis to secondary schools students and teen agers. During the workshop students could see how hydrocarbons spread in the water and how to respond to such an emergency. They could see and use all the tools used for this purpose, while talking about science, the environment and jobs related to the subject. After a period of three months, the workshop was moved to another museum (MuVita, Arenzano), where it was replicated with the same modalities. Arenzano was chosen because the Haven oil tanker finally sank one mile off its coast, and part of the wreck is still there.
- ▶ One day at sea! - This event was designed to let the young generations discover the wealth of traditions and marine culture of their own sea before they are lost forever. A special day at sea was therefore jointly organized together with the association Fishermen of Sant' Ambrogio, and kids from Voltri (a town in the Genoa urban area) were involved in the traditional fishing technique called "sciabica".
- ▶ Diving the Haven - Professional scuba divers dove the wreck under the supervision of the local Coast Guard. They shot videos and took photographs. The images were shown in the exhibition, and became a permanent element of the museum path, is the section dedicated to underwater archaeology.
- ▶ The sailor's chest - What links a fishing net, a boat in a bottle, a coin, a piece of amber, a rope and a tea bag? The sailor's chest is a 4SEAS joint activity that each 4SEAS partner has undertaken in its location and country. The chest was filled by each member of the consortium with various objects representative of their own culture and local area and sea. Then, it was shipped around Europe to reach Sevastopol (Ukraine), Gdynia (Poland), London (UK) and Genoa. In each location, the disembarking and opening of the chest has been transformed into an event, and into the chance for visitors and kids to discover more about the 4SEAS project and the European maritime heritage.
- ▶ 4SEAS for Slow Fish: stockfish and cod, the history - The major international biennial event 'Slow Fish', organized by Slow Food and the Liguria Regional Authority Region, has been held for the third time in Genoa from 17 to 20th of April 2009. Within such scenario, MuMA created a series of panels and a video presentation showing the history of the stockfish, a traditional food in Genoa but coming from the North and the Baltic Seas. Panels were displayed in the Slow Fish fair and, later, in the museum.
- ▶ From the Baltic to the Mediterranean Sea - This was another event that took place at the Galata Maritime Museum to promote the 4SEAS project. It was a contemporary art exhibition by young artist. They all share the same theme: using different techniques to represent the sea, from the Baltic to the Mediterranean.
- ▶ Short movie: Born under the shade of Haven - A Short by Bonsai Film - Antonella Sica & Cristiano Palozzi, *Born under the shade of Haven* collects interviews to eighteen-year-old teen agers from Arenzano, the small town near Genoa that was heavily affected by the Haven disaster. They were asked to express their thoughts about that event, and their feelings towards the sea. The movie aims to show the relationship between young people and the sea, and their awareness about the marine environment.
- ▶ MAC Project: Coastal Environmental Monitoring - This documentary was shown to over 120 secondary school students on May 10 and 11th 2009. It was displayed in the Museum's Auditorium and introduced by one of the authors. The documentary promotes a monitoring project based on the work of non professional, volunteer divers.

- ▶ Nunca mas - A docu-film about another environmental disaster, the sinking of the Prestige oil tanker, in Galicia (November 2002). The documentary shows all the actions performed to try and limit the disaster, plus all the monitoring activities deployed in the following years. The projection was for secondary schools.
- ▶ FIDRA - Festival of Environmental Reportage - This event was created by the Genoa Film Festival. 4SEAS joined in part of the organization and presented the documentary Born Under the shadow of Haven. By an idea from the Genoa Film Festival, FIDRA is the most important cultural and movie event dedicated to the environment held in the region, and is one of the most popular events in this field in general. FIDRA is organized in cooperation with MuVita, the science centre located in Arenzano, nearby Genoa.
- ▶ MuMA educational 4SEAS web platform - From the experience of the 4SEAS website, MuMa Education Service developed the idea to create its own website specifically dedicated to education in museums (<http://150.145.21.101/>). MuMA achieved a good success in this, thanks to the abilities and skills obtained working on the entire WP2.

Side events and multimedia in London:

- ▶ Underneath the Beach Towel - When you go to the beach, it's fun to look for wildlife in the rock pools around you. But what amazing creatures lie unseen in the sand beneath your feet? Even a small handful of beach sand is teeming with life, so small that you need a microscope to see it. In this event, our audience was invited to discover these amazing creatures, from wriggly worms to secretive shrimps that we share your holidays with.
- ▶ Flotsam and Jetsam: A British Beach Clean - One of the most iconic images of Britain is summer holiday by the seaside. But in addition to starfish and seashells, often less pleasant things can be found on the beach. Empty drinks bottles, crisp packets and other rubbish that accumulates from a variety of sources isn't just unpleasant and dangerous for human visitors; it can have a hugely detrimental effect on wildlife. As part of the Wembury Bioblitz, which took place in August 2009 in Plymouth, UK, volunteers from the British Trust for Conservation Volunteers conducted a beach clean. We took a sample of the collected litter back to the Natural History Museum where it was washed and sorted into different categories – metals, plastics and wood and other natural products. This event linked with beach cleans conducted on other 2 4SEAS partners' beaches. Although most of the rubbish came from the UK, some of it had floated here from further afield, with bottles from both the Mediterranean and the possibly the Baltic present in the rubbish picked up.
- ▶ The End of the Great British Fish Dish - Some of Britain's most iconic dishes involve fish. But stocks of Cod, the fish most used in Fish and Chips, are getting so low that we are advised not to choose it any more. Other fish stocks are also feeling the brunt of our increased appetite for this nutritious food source – but at the same time we are advised to eat more. What should we do? And how should we choose the fish we eat, if you want to make sure its from a sustainable source? This event involved experts talks, fish tasting and blind taste test. In the second section, the floor was opened for an audience led debate, with questions such as how to make sustainable choices, and questions about the EU quota system being hot topics.
- ▶ The sailor's chest - *The Sailor's Chest arrives in London!* This event was the NHM's contribution to one of the core 4SEAS activities. After travelling from Ukraine and Poland, the 4SEAS Sailor's Chest arrived at the Natural History Museum and its contents were explored and celebrated in a special event. Families and adults visiting the Museum joined in to discover what treasures the chest contained, where each item came from, and what it told us about the sea it represented.

- ▶ Sea Lilies of Jurassic Park - Sea lilies, or crinoids, are beautifully coloured animals related to starfish and sea urchins. This informal engagement event looked at the remains of sea animals that used to live in the ancient seas that covered the British Isles in the Jurassic Period, and where you can find them along the coast of Britain today.
- ▶ All Squid Great and Small - Within the zoological collections at the Natural History Museum is a squid of truly gigantic proportions, at a grand total of 8,62 meters long and usually found in the depths of the oceans, this deep sea monster is our very own Giant Squid specimen, *Architeuthis dux*, and was the focus for this event with its curator, Jon Ablett. Known fondly as Archie, it is an animal of wonder and mystery.
- ▶ Great Whites in Great Britain - This event discussed potential sightings of Great White Sharks around the UK, and other sharks that are present in EU waters. Oliver Crimmen, fish curator at the Natural History Museum, explored the evidence and science behind some of the sightings that get reported every summer.
- ▶ Wembury Bioblitz - 4SEAS staff joined with many other external participant to take part in this 24hr Bioblitz in conjunction with the NHM Open Air Laboratories (OPAL) Network (<http://www.opalexplorenature.org/>). A bioblitz is a comprehensive survey over a 24 hour period that aims to record as many species of plants and animals as possible, to get a snapshot of the state of the area. In this case, we were taking part in the Bioblitz on a beach in Wembury, Devon, a site of special interest with a long history of marine science. This large event gained both local and national media coverage. The event was also filmed by the British Broadcasting Corporation (BBC) to provide materials for inclusion in a 6 part documentary series about the work of the NHM called, *Museum of Life*.
- ▶ Ocean Planet - This event, linked with International Year of Biodiversity giving audiences an overview of the diversity of life that lies in the oceans of Planet Earth. In particular is focused on the diversity of major animal groups - phyla - and highlighted the fact that of the 34 recognised animal phyla, 33 are found in the seas, compared with 16 in freshwater and only 12 in terrestrial ecosystems.
- ▶ Fabulous Fish Ear Stones - Fish ear-stones (otoliths) are small mineral deposits found in the inner ear of bony fishes. Like tree rings and fish scales, they show annual growth rings and are important in the study of modern fish populations. Each fish species has ear-stones of a distinctive shape, enabling them to be identified from the ear-stones alone and there are many fossil fish species that are only known by their ear-stones. This event looked at the presence of fish ear stone in the fossil record, and featured a dissection, with audience participation, showing where fish ear stones occur in the fish, what they do, and how they can be used in fisheries research.

Side events and multimedia in Gdynia:

- ▶ The grand opening of the exhibition at SFI - It took place on 4th April 2009. This event was connected with the opening of the sailor's chest and was directed mainly towards primary school children. They first attended a lecture dedicated to four European seas, the project 4SEAS and laboratory exercises entitled *Our Sea - Baltic Sea* focused on the presentation of Baltic fauna and flora.
- ▶ Event series - In the period April-May (18.04., 25.04., 16.05.2009) a series of events concerning 'Biodiversity', 'Pollution', 'Eutrophication', 'Animal protection' and 'Invasive species' were organized. Events usually started with a lecture and multimedia presentation focused on a specific topic, followed by a walk to the beach and identification of animals and algae found on

the shore and in the shallow water and a tour in the Gdynia Aquarium. Invited groups consisted mostly of children and youngsters from countryside and small towns.

- ▶ International Biodiversity Day - In May 2009 we celebrated the International Biodiversity Day. It was a great opportunity to cooperate with another ecological institution - the Center for Ecological Information and Education. Our visitors – very often the whole families - could watch movies entitled *Meadows* and *Marine Mammals* and could visit our laboratory and perform chemical experiments. A huge model of the Baltic Sea was constructed in the open air by children and adults who participated in this event.
- ▶ The Baltic Festival of Science - Baltic Festival of Science is a compilation of scientific events and is organized every year by various local scientific centers. It was a great opportunity for the Gdynia Aquarium to promote the 4SEAS project.
- ▶ Children's Day - An event entitled *What you didn't know about the Baltic Sea ?* was focused on the presentation of some invasive and alien species to the Baltic ecosystem. The Children's Day celebration was an opportunity to organize a family event.
- ▶ What can the sea do for you? - An event entitled 'What the sea can do for you' was organized on the 20th of June. The Gdynia Aquarium invited two cosmetic companies: BIOMARIS and Dr Nona known of producing cosmetics based on products of marine origin. Our visitors attended a lecture and presentation dedicated to the role of substances of marine origin to the human's health and beauty and afterwards could enjoy free spa treatments.
- ▶ The Beachcombing Day - This action was organized in cooperation with the Marine Academy Corporation. While 30 divers from the Academy were cleaning the shallow sea bottom in the vicinity of the Gdynia Aquarium, groups of children competed on the beach for collecting the biggest amount of rubbish. The winners got prizes.
- ▶ Sea cruises - Two educational sea cruises for youngsters were organized on a hydrographic ship on the Gulf of Gdańsk. Participants of this cruise could use oceanographic equipment, they sampled water and bottom samples, afterwards extracted fauna and flora from these samples and analysed them under the binocular upon returning to the laboratory.
- ▶ Weekend event series - Series of weekend events concerning biodiversity and sea wrecks were organized in the Gdynia Aquarium in autumn and winter. *Wreck weekend in Gdynia Aquarium* was organized in November 2009. We invited for cooperation a diving team who agreed to share their experience with the public. Our guests could watch movies about wrecks sunken in Baltic Sea, learn about their history and have a chat with divers.
- ▶ Meet your Sea - All day long visitors could enjoy ecological movies screened in the Aquarium's cinema. Films were dedicated to marine biodiversity, sea mammals, sharks, and Baltic Sea. The biological laboratory was open and available for visitors. Large variety of marine organisms from many different parts of the world were exposed in this lab and visitors could observe them either with unarmred eye or under a microscope.
- ▶ Underwater Art Gallery - Each event organized in the Gdynia Aquarium had a special part dedicated to children. In the *Underwater Art Gallery* kids could create marine images using colourful pencils, paints or plasticine or could colour in ready images of marine animals. This was an effective way to learn the names of these animals.
- ▶ Santa Nicholas is going underwater!!! - This event was organized on 05-06.12.2009 and was directed mainly towards children. Kids could meet Santa Nicholas and enjoy educational games, shows and riddles dedicated to the sea and marine creatures.
- ▶ The Baltic - a Sea Mystery - An original full length movie dedicated to the Baltic Sea.

Side events and multimedia in Sevastopol (overall, IBSS and SMA have released 34 videos/multimedia products and re-worked 10 videos by external actors - this is not included in the list):

- ▶ Inauguration of 4SEAS exhibition - Official inauguration of 4SEAS exhibition in IBSS-SMA was held on 22th of April, on the International Day of the Earth. The opening side event for scholars and public *4SEAS from the sailor's chest* was held in IBSS conference hall and SMA localities, started from a multimedia presentation about the project. Three films dedicated to different topics about marine research and biodiversity were presented, introducing both original and restored IBSS videos. Afterwards, the *Sailor's chest opening and old sailor's chest quiz* took place in the hall of SMA. It started with a theatrical *Homecoming of the old sailor*, who asked the kids to open the 4SEAS sailor's chest, and showed them his collection from the 4SEAS.
- ▶ Biodiversity lesson with IBSS scientists - One day at sea - This event was held using various approach, including hands-on science and direct sampling/preparation and observation by the audience.
- ▶ Live Drop - IBSS lecture-hall with kids and their parents. Key-persons specialized in plankton research made a popular lecture on marine plankton with the help of multimedia demonstrations of different marine plankton species videos filmed under the microscope. Biodiversity lessons *Live drop* were followed by the demonstration of 4SEAS IBSS videos on the plankton life *One day life*.
- ▶ Biodiversity lesson with IBSS scientists - Tiny little house - It started with a scholars excursion on Sevastopol Bay beach. The kids carefully collected the specimens of different species of seaweeds with the tiny inhabitants on them. They brought the collected material to the IBSS lecture and investigated samples of seaweeds and animals living on them by naked eye and under the binocular.
- ▶ Eco Action - Human garbage monster on the beach - This was a joint-venture with the NGO SeaCamp 2000 held on the 1st of June 2009, the International Kid Day, on the coast of the Kamyshovaya Bay. Teenagers 13-14 year old were involved in this event. They wanted to draw attention of local public and the tourists to the threat of the Black Sea with increased pollution of human origin leading to degradation of the sea coasts. After a week the initiative group has cleaned the beach from garbage and its monsters.
- ▶ Fascinating invaders: Jellyfish - Held in IBSS hall for scholars, this side event included a presentation of 4SEAS, the video *Dramatic changes in the Black Sea* and spectacular videos on significant changes in the Black Sea over the past 20 years. The event was repeated in different student auditoriums from local universities. Special emphasis was put on the catastrophic impact of different jellyfish species on the Black Sea environment.
- ▶ Demonstration side events - Demonstration of different 4SEAS videos (with comments of SMA specialists) was carried out for different associations: 2 local sport clubs and Sevastopol association of disabled people. Separate side events on 4SEAS new videos showing with authors comments were held in IBSS and outside – in institutions, in colleges, in schools.
- ▶ History of marine research and marine expeditions - Carried out in January - February 2010, these were 4SEAS events on the joint theme *history of marine research and marine expeditions*.
- ▶ Marine biology research: history and personalities - This event was held on 15th of January 2010 building on long-term research in different private archives despite already prepared videofilms on the history of marine research in Sevastopol (material rescued from state archives).
- ▶ Development of marine expeditions status and role of IBSS in expedition research - End of February together with first demonstration of the 4SEAS IBSS videofilm *Long way of marine expeditions*.
- ▶ Wintering waterbirds in Sevastopol Bays - January-February 2010 in form of several outdoor lessons for the 12-15 years old kids, with ecological excursions.

- ▶ Joint action: Pontus Euxinus - In September 2009 4SEAS side event was organised with external actor - international conference of young scientists - Pontus Euxinus - devoted to ecological problems of water ecosystems.
- ▶ Joint action: Ichthyological International Conference - Display of *Black Sea fisheries: past & future* (IBSS – 4SEAS remake of old films on fisheries in 1930-s and own short videos on modern fishery in the Black Sea (<http://www.4seas.eu/node/824>) and Italian (MuMa) video *Fishery methods*.
- ▶ Joint action: Hydronaut - This event brought together the veterans of the Base of Sea Exploration Fleet and Manned Submersibles Hydronauts and the wide Sevastopol pub.
- ▶ Joint action: Black Sea treasures - A kids exhibition organized jointly by external actor and SMA and IBSS. Different Black Sea thematic art works of the scholars of different ages were presented on *Black Sea Treasures*.
- ▶ Joint action: Do you know the Black Sea? - Big Quiz *Do you know the Black Sea?* developed by SMA was held among more than 200 scholars together with external actor Sevastopol Palace of Childhood and Youth.

WP7 - Public assessment of impacts

Public assessment of impacts constitutes a whole Work Package under 4SEAS. Screening by means of Questionnaires (Kids and Adults Questionnaires) distributed to the public attending 4SEAS events, visiting 4SEAS exhibitions or surfing 4SEAS website aimed to: provide feedback to the Consortium *in itinere* (thus allowing for adjustments); keep the bidirectional dialogue open with the 4SEAS audience. Kids Questionnaire consists of 11 questions, while the Adults one consists of 9. They were released in the four national languages involved in 4SEAS plus Russian. The population considered varied according to the locations, being comprised between 5 and 17 for kids and between 15 and over 70 for adults. Almost 1,900 Kids and 2,000 Adults returned a filled Questionnaire. 4SEAS obtained a good to very good feedback both from the young and adults (positive feedback being testified by over 90% of responders in the relevant questions).

Further to this, an additional assessment activity has been completed under WP7 that was not initially planned. This was an internal assessment carried out before meeting n. 5 (London) to set the point concerning the consortium's perception about 4SEAS. The internal evaluation consisted in a questionnaire circulated among the partners. Each partner was invited to fill one copy in, providing honest and direct responses. Questionnaires were analyzed by partner n. 2 (Gaia) that deemed the information strictly confidential. The questionnaire consisted of 16 general questions (numbered Q1-Q16) with sub-questions that addressed specific aspects. Partners could answer by a three points Likert scale and could add comments to each sub-question. The internal assessment highlighted important aspects that were then addressed at the London meeting.

WP8 - Promotion, dissemination and achievement of self sustainability

WP8 has three main lines of action: promotion of 4SEAS; dissemination of 4SEAS contents; achievement of self-sustainability of 4SEAS beyond the two-year project.

While joint promotion had been deployed at the end of Year I, during Year II (i.e. during the actual performance of exhibitions and side events) the promotion of 4SEAS activities has been mainly carried out individually by each partner involved in WP6.

- ▶ *MuMa: A phoenix from the flames* was advertised at the welcome desk in the museum and with periodic public announcements. Moreover, the exhibition was located on the main path of the museum and close to the Museum Cafè Restaurant, and was accessible for the restaurant customers also without a museum ticket. Promotional activities at MuMa also took advantage from the Galata Maritime Museum Press office, which is the same of The City of Children and of the Genoa Aquarium (over 1,000,000 visitors/yr). A press conference was held two days before the opening, and a press release was organized after the opening of the exhibition. When the exhibition moved to Arenzano another press release was organized and the information was spread in the local area and to the MuVita Science Centre Newsletter list.

- ▶ *NHM*: Each event was listed on the Natural History Museum's website, which reaches 40-50.000 people every day and announced to all of our visitors in the public galleries. They were also advertised on the NHM's web page, on the Nature Live Blog pages, Facebook and Twitter accounts, on a monthly calendar sheet, and as update e-mails to the Nature Live mailing list. Special events were also advertised in Time Out magazine, and with email shots and flyers to local organisations such as Imperial College London. Special pin badges were created to be given out at events which featured the 4SEAS logo and website address, and these proved very popular. Wembury Bioblitz gained both local and national media coverage, and was filmed by the BBC to provide materials for inclusion in a 6 part documentary series called *Museum of Life*, which gained an audience of 1.4 million viewers. The Bioblitz is featured as a seven minute section toward the end of the 60 minute programme. 4SEAS staff can be seen on four occasions and the 4SEAS logo can be seen on the back of the special Wembury Bioblitz T-shirts worn by all of the participants.

- ▶ *SFI*: Every event was preceded by the announcement and detailed information given during the press conference of the Gdynia Municipal Council, attended by journalist from the local media. Informations and announcements were also published on the official website of Three-City. Every event was announced on posters exposed in the Aquarium, cinemas and in the biggest supermarket. Banners and gadgets were distributed among the Gdynia Aquarium visitors. 20,000 4SEAS Booklets both in Polish and English version were distributed among the Gdynia Aquarium visitors. Since January 2010 a huge, promoting campaign has been organized. The Gdynia Aquarium prepared posters concerning information about 4SEAS and the main concern of the project so we have provided knowledge to the public about European seas, their importance and needs. The goal was to get the most popular and available public space. Therefore, it was decided to rent commercial space on bus stops in the most exposed areas in Gdansk so basically every Gdansk citizen have a chance to see it. The exposition lasted a month (mid-January to mid-February). The second choice were trains which ride along TriCity (Gdansk, Sopot, Gdynia). Educational material was put in trains' compartments so every passenger could spend few minutes learning something new about marine ecosystems while traveling. Approximately 3 million people per month could attend the campaign. This exposition lasted 6 weeks. The Gdynia Aquarium has also created a specific 4SEAS page on its institutional website (in Polish and English), with a link to the 4SEAS web site. Statistics indicate that in the period October-December 2010 already 500 people visiting the aquarium website have entered the 4SEAS website.

- ▶ *IBSS-SMA*: To engage with public at large into different 4SEAS activities, IBSS and SMA elaborated multiple approaches: posters (in different halls of SMA), digital video panels about activities, web-based project exhibitions, public announcements by SMA guides, flyers

addressed to different ages, mailing lists, with short information on 4SEAS and exhibition programme. Special flyers were created for different side-events. Media promotion was also pursued actively through the local and regional TV channels broadcasting (Independent Sevastopol TV, 1st Sevastopol TV Channel, Sevastopol State TV-Radio Company, Narodny Canal TV, Independent TV of Sevastopol). The internet TV- RIVIERA asked permission of 4SEAS consortium to demonstrate 4SEAS general information, 4SEAS videos. IBSS and SMA considered DVDs promoting 4SEAS activities (containing IBSS videos and multimedia and information on 4SEAS project and web-site, including 4SEAS Consortium Booklet) as the main dissemination material of 4SEAS. The audience reached by these promotional activities is distributed all around Europe and beyond: Russia, Belorussia, Latvia, Israel, USA, France, Great Britain, Germany, Canada).

As far as dissemination of 4SEAS contents is concerned, partners had initially agreed to suspend such specific task as priority was given to WP5. At that time it was agreed that dissemination is embedded in 4SEAS as a specific goal of the project and, as such, it would be pursued throughout WP6. While this approach still holds today, the Consortium finally decided to edit a booklet dedicated to 4SEAS and summarising most of its activities, as a portfolio of the project itself and a pamphlet on marine science and topics. The booklet is available at: <http://www.4seas.eu/read> in two versions: an environmentally-friendly printable version and a full-colour (for screen-reading only) one. Furthermore, three short underwater videos have been contributed by Partner n. 2 (Gaia), two of which original 4SEAS videos. These were not foreseen according to the original plan. Finally, Partners n. 5 (SFI), n. 6 (IBSS) and n. 7 (SMA) created DVDs containing part of the most relevant 4SEAS products, distributing them to the audience both as a promotional and a dissemination material.

4SEAS aims at becoming an established network for the promotion and the discussion of marine-related science. As a consequence, the involvement of a larger number of partners in the future shall be encouraged. This effort has been testified by the number of relevant external actors involved in the project, both as target groups and as cooperators. Indeed, with the exclusion of schools and universities, the project engaged with at least 50 different external actors in Italy, Ukraine, Russia, Poland, UK and France. These have provided for dissemination and promotion of the project beyond its institutional boundaries, and have set the foundations for future cooperations. On the other hand, an efficient network of the kind presented herein needs funding to ensure connectivity and future joint actions of promotion, integration and dialogue with the public at large. Therefore, various strategies to ensure the self-sustainability of the project were discussed at the final meeting in Genoa. It was finally agreed to adopt a three-pronged approach:

- ▶ The 4SEAS website will be kept fully functional and will be constantly updated and maintained. This will grant the continuous engagement of the Consortium with its audience, while working to set up more formalised joint actions - project (which will need funding). Clearly, this is also a very cost-effective solution as it only requires resources in terms of person time dedicated to the updating of the website (on which the partners have agreed). The decision to upload the video/photo material derived from performed 4SEAS events during the entire course of year 2010 was also taken to keep the website “alive” and therefore captivating for the audience.

- ▶ 4SEAS products may be hosted on the 4SEAS partners' websites (or to external actors' ones, with no prejudice to IP rights as set forth in the CA). Similarly to the point above, this is a cost-effective solution to circulate 4SEAS material beyond the project's life, thus also ensuring further dissemination and outreach. As a positive side effect, this also helps strengthening the relationship with external actors that might take part in future joint activities.
- ▶ The partners will search for new opportunities to cooperate in (a) formal project(s) that might involve the whole Consortium, just part of it and/or include more new partners. The ultimate solution to ensure the sustainability of 4SEAS is to search for funding. In this way, activities further to web-based ones will be carried out in the line of 4SEAS. At the time being, funding is being searched again via EC grants. These may come through the 7FP, but other options (notably INTERREG and Cohesion Programmes) are being considered.

Finally, given the success of 4SEAS, some partners have decided to insert a number of 4SEAS events and exhibits in their routine programme. For example, the Sailor's Chest at MuMa will be replicated several more times.