Mid-term progress report

›› *Cover image: Archaeological dive on the site of the "Iron Ingots" in the Triagoz (France)*
›› *On this page: Immersion of divers*

›› *A2S team briefing during a survey off the coast of Morbihan (France)*

« We hope that this document will enable you to better understand the scientific importance of this work and the enthusiasm which motivates us. »

Foreword

The Archaeological Atlas of the 2 Seas project (*A2S*) began in August 2009. It is the product of much thought on the part of three European countries. The partners involved are French: ADRAMAR *(Association for the development of underwater archaeological research),* Belgian: VIOE *(Flemish Heritage Institute, Maritime Heritage Unit)* and English: HWTMA *(Hampshire and Wight Trust for Maritime Archaelogy).*

The aim of this partnership is to share national resources and expertise in order to promote underwater archaeological research.

At this stage the project partners feel it is important to report our progress by collectively writing and publishing a document summarise the work undertaken to date, the tasks which are outstanding and to describe future initiatives.

We hope that this document will enable you to better understand the scientific importance of this work and the enthusiasm which motivates us. It comes from a desire to work together and to establish durable means of sharing knowledge concerning our common underwater heritage.

This is an ambitious task, but we are undeterred. We established at the start of the *A2S* project our intention to achieve it by developing an effective working method which in the future can be extended to other partners and other common research priorities.

In the following pages you will immerse yourself in the *A2S* project through the reports of the project partners; the financial aspects of the project management; the archival research; the development of the geoportal; the fieldwork and the education and communication activities.

Good reading!

Alexandre Poudret-Barré
A2S *Project Coordinator*

›› *Connecting rod from SS Coquetdale*

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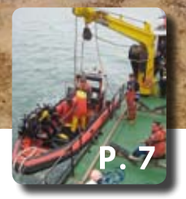

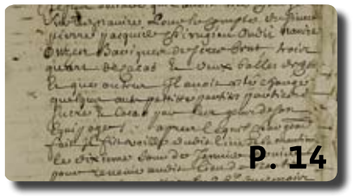

Objectives of the project

- → Build an international archaeological team
- → Establish a cross-border collaboration between the partners
- → Share knowledge and data about underwater archaeological sites
- → Create a publicly accessible geoportal about the underwater cultural heritage of the 2 seas
- → Survey underwater archaeological sites to enhance our understanding of our submerged cultural heritage
- → Promote our common underwater cultural heritage through education and outreach
- → Share experience and best practice in archaeological techniques
- → Assist students and volunteers in gaining practical experience of underwater archaeological methods

›› *Launching the rigid inflatable from the research vessel* Zeeleeuw *(Belgium)*

A2S project

Archaeological Atlas of the 2 Seas (*A2S*) is an ambitious project to collate cross-border archaeological maritime heritage data. It is being delivered by ADRAMAR, HWTMA and VIOE and is being co-funded by the European Union. The project is supported by three of the main marine archaeological research and management groups in Europe: DRASSM in France, VIOE in Belgium and English Heritage in the UK.

The overall aim of the four-year project is to map underwater archaeological sites in the shared seas of France, England and Belgium.

Sharing both the English Channel and the southern North Sea, these three coastal states have a common heritage drawn from a shared maritime history.
Europe's foundations rest on wars, trade and alliances. While shipwrecks bear testimony to our often shaky allegiances, underwater archaeological landscapes illustrate our history dating back many thousands of years. This geographical area forms a tangible link between the countries of northern Europe, constituting a common cultural heritage.
However to date, despite this shared history, the treatment of both documentary and archaeological data is still essentially based at the national or even local level. ***A2S* was born from this lack of exchange. Its aim is to combine the knowledge and information related to the underwater archaeology in our shared seas so that each country has access to all possible information, not just that from its own national resources.**
For example, research related to an English ship wrecked in French or Belgian waters is often not extended to British archives. This is a frustrating situation for researchers and it is these sort of limitations that this international project aims to resolve.

A new approach to understanding our shared maritime history is now underway using the combined skills of French, English and Belgian archaeologists.
For several years these three countries have collected and mapped data on archaeological sites in their own seas.
One of the first stages of the *A2S* project will be to link the partner's databases via a geoportal which will create a comprehensive underwater landscape. This information will be added to in the years to come and will include the location of known shipwrecks and other underwater archaeological sites. **This is aimed not only at students, researchers and the general public, but also at heritage management groups in the partner countries.**
Alongside this research and data compilation, archaeological teams from the three partners will be deployed to conduct geophysical and archaeological surveys in each of the partner countries. Some of the shipwrecks that have been chosen for study have great significance in terms of shared heritage between the member countries. One such vessel, SS *Meknès*, was a French ship repatriating troops to France in July 1940 after the Franco-German Armistice. A German E-boat torpedoed the vessel, despite the treaty. It lies in English waters.
By the end of the project, the international team will have amassed a wealth of information for the geoportal which will give a broad range of possible research topics. These could range from the study of ancient trade routes and comparative studies on naval architecture, to the evolution of nautical weaponry and even the study of the possessions that characterised the daily lives of mariners.

›› *Towed deployment of magnetometer during a survey*

« *Archaeological Atlas of the 2 Seas (A2S) is an ambitious project to collate cross-border archaeological maritime heritage data.* »

Adramar's team


Alexandre POUDRET-BARRÉ
Projects Manager
Maritime Archaeologist


Charlotte GEORGEAULT
Financial Manager


Django GUYON
Archaeologist


Anne HOYAU-BERRY
Maritime Archaeologist


Georges LE PELLETIER
Boat Mechanic


Yann GAONAC'H
Historian


Charlotte LE NOAC'H
Archaeologist


Cécile CHATELIN
Communication Manager

Hwtma's team


Garry MOMBER
Director
Maritime Archaeologist


Amanda BOWENS
Education & Outreach Manager


Virginia DELLINO-MUSGRAVE
Project Manager
Maritime Archaeologist


Lawrence MORAN
Consultant
Maritime Archaeologist


Victoria MILLERSHIP
Administrator
& Project Officer
Maritime Archaeologist

→ Other staff members of the HWTMA have also been involved in the project in various capacities

Vioe's team


Inge ZEEBROEK
Project coordination
Maritime Heritage Researcher


Ine DEMERRE
Project coordination
Maritime Heritage Researcher

A2S scientific partners

***The Association for the Development of Maritime Archaeological Research* (ADRAMAR)** was formed in 1993 by professional archaeologists in order to promote research into maritime archaeology both in France and internationally. It has participated in some high profile excavations : the wrecks of La Natière (St Malo, 18th century), the Brunei junk (Borneo, 16th century), the Lapérouse expedition (Solomon Islands, 1788)...

ADRAMAR's mandate brings together the following:
- → the study and protection of archaeological sites;
- → assistance and training in marine archaeological excavations;
- → organising scientific meetings, conferences and exhibitions;
- → publication of monographs and archaeological guides;
- → consultation with public bodies, groups and associations;
- → increasing public awareness of marine archaeology.

ADRAMAR works together with the DRASSM, part of the French Ministry of Culture and Communication which is responsible for managing, protecting and studying French maritime heritage at home and overseas.

Since 2005 ADRAMAR has been leading the project *Atlas archéologique des biens culturels maritimes de l'Arc atlantique*, thanks to the financial support of local government. This project is helping to demonstrate the value of submerged archaeological sites off the west coast of France. It largely inspired the *A2S* programme of which ADRAMAR is the project leader.


Olivia HULOT
Project Officer
Maritime Archaeologist


Denis DÉGEZ
Project Officer
Maritime Archaeologist

The DRASSM in France,
a partner involved in the *A2S* project!

The Department of Underwater Archaeological Research (DRASSM), has a national responsibility for the protection and management of France's submerged cultural heritage. The DRASSM is a key partner in the *A2S* project. It provides expertise through the secondment of two staff for six months of the year and supports the project financially. The staff are Olivia Hulot, the DRASSM official responsible for the Atlantic, English Channel and North Sea coasts of France and Denis Degez, project officer. Both lend their knowledge and expertise to project activities.

In 2005, the DRASSM initiated a precursor project on the Ponant (west coast of France), called the *Atlas archéologique des biens culturels maritimes de l'Arc atlantique*. This is a GIS based register of underwater archaeological sites, supported by a substantial number of researchers, professionals and volunteers working within a common framework. In 2008 and 2009 this was followed by similar projects undertaken for the coasts of Provence and Languedoc.

***The Hampshire and Wight Trust for Maritime Archaeology* (HWTMA)** was founded to promote interest, research and knowledge of maritime archaeology and heritage in the UK. This includes archaeological research and education and outreach activities on a local, national and international scale.

The HWTMA's objectives include :
- → maritime archaeological research and investigation;
- → preservation and management of archaeological sites;
- → public awareness, enjoyment and participation;
- → archaeological awareness and competence amongst divers;
- → development of a maritime archaeological database of sites;
- → publication of investigations and research;
- → liaison with local, regional and national heritage organisations.

To fulfill these objectives the HWTMA runs a programme of research-led fieldwork with professional archaeologists, volunteers and students. Shipwrecks, submerged landscapes and inter-tidal sites are investigated and reported through publications, lectures, educational initiatives including resources for schools and educators and outreach events.

The HWTMA's goals correspond with the aim of the *A2S* project of facilitating fully-integrated European co-operation in the investigation of internationally significant wrecks and submerged landscapes. The HWTMA believes that trans-national links are vital to enable full analysis and dissemination of our common heritage.

***The Flemish Heritage Institute* (VIOE)** is a research centre of the Flemish Government. **It studies heritage, prepares inventories and improves scientific outreach**.

→ VIOE's primary objective is research. It provides the information necessary for the Flemish Government to make policy decisions on heritage matters, resolving specific questions or problems. VIOE carries out archaeological excavations and analyses cultural artefacts, as well as human, faunal and floral remains. It studies historic shipwrecks, historic gardens and crops, maps ancient landscapes and researches historic buildings.
→ VIOE **manages** large inventories of architecture, archaeology and landscapes. This also includes maritime heritage through a Belgian national database www.maritime-archaeology.be
→ Research results are **published** in leading international and national scientific journals (such as the Institute's journal *Relicta*). The public is also kept informed through exhibitions, conferences and other educational events.
→ For these tasks VIOE often **collaborates** with universities and other partners in the heritage sector, like the province of West-Flanders.

The maritime unit of the VIOE is the youngest partner in the *A2S* project. **Through the project, the institute plans to develop into a major player within maritime heritage research**. Its aim is to improve its knowledge and expertise with the structured gathering of information on the maritime sites chosen by *A2S*, using new recording and survey techniques and in working closely with the French and British project partners.

Steering Committee members

What is the *Steering Committee*?

Because of the importance of the work, the partners in the *A2S* project wanted to draw on the knowledge of European experts in Maritime Archaeology from the outset.
This allows the project objectives and the results to date to be presented to Steering Committee review meetings where these consultants can draw our attention to issues which extend beyond the project's activities and which may affect ongoing work. They use their expertise to suggest changes to planned future work.
During the four years of the project, three Steering Committee meetings are planned. One took place in Brussels in December 2010, a second is planned for December 2011 at Southampton and the last will take place in Rennes for the project's closure.

→ Michel L'Hour
Director of the DRASSM
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13016 Marseille
France

→ Eric Rieth
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→ Adrian Olivier
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England

→ Geoff Bailey
Professor
Department of Archaeology
University of York
The King's Manor
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England

→ Marc De Bie
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→ Marnix Pieters
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→ Tine Missiaen
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B-9000 Gent
Belgium

→ Jerzy Gawronski
Head of the Archaeological Division, city of Amsterdam
Professor University of Amsterdam
Hoofd Archeologie
Herengracht 482
Postbus 10718
1001 ES Amsterdam - Netherlands

›› *The associations* St-Malo Plongée Emmeraude *and Les* Oubliés du *Meknès were alongside the* A2S *team during the SS* Meknès *investigation (England).*

›› *Daniel David, one of the many enthusiasts of History and Archaeology involved in the project, showing a map of a wreck location to Olivia Hulot*

›› A2S *team members preparing to dive at* Bouldnor Cliff

›› In situ *examination of a core taken on Raversijde beach (Belgium) with a Van der Staay coring device*

Co-workers

Volunteers, passionate participants!

The projects undertaken by the three partner countries would not exist without the active contribution of volunteers.
People passionate about history, wrecks and maritime archaeology have helped build this project by giving us access to the results of their research work in archives or in the field. Some of this precious information has been incorporated into databases developed over many years.
The data is being used to enrich our national databases and at a European level, the geoportal of the *A2S* project.
We want to thank them sincerely for their interest and the trust which they have shown us over the years.

The INTERREG IV A 2 Seas Programme

Helps you to develop your crossborder ambitions

The 2 Seas Programme enables crossborder cooperation of local and regional actors from different territories of 4 Member States of the EU: England, Belgium (Flanders), France and the Netherlands.
The purpose of this programme is to generate positive results and solve issues of common interest in situations where this would not have been possible through a strictly national approach.
The Programme is based around the three key priorities of economic development, environment and improving quality of life and includes a common priority with the France (Channel)- England INTERREG IV A programme.
The 2 Seas Crossborder Cooperation programme is part-financed at a European level (ERDF) with 167 million euro within the programming period 2007-2013.

3 thematic priorities and 1 common priority

Priority 1 – Creating an economically competitive, attractive and accessible area

A few examples: research and innovation, sustainable tourism, development of an entrepreneurial spirit, job creation, accessibility...

Priority 2 – Promoting and enhancing a safe and healthy environment

A few examples: promotion of renewable energy, reduction of marine pollution, reduction of greenhouse gas emissions ...

Priority 3 – Improving quality of life

A few examples: social inclusion, education and life-long learning, promotion of common heritage ...

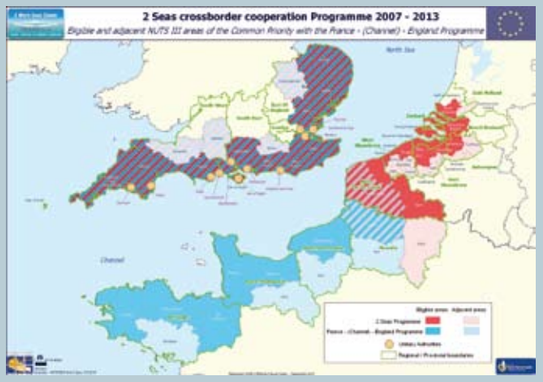
Priority 4 – Common priority with the France (Channel) – England programme

Issues of common interest relating in particular to a marine dimension in a crossborder perspective, exchange and capitalisation of best practice, networking of projects already implemented within the framework of both Programmes.

You can participate

If your project fits into the thematic priorities and highlights the added value of crossborder cooperation. All projects should be composed of at least one English partner and a partner from another Member State in the geographical area of the 2 Seas programme. Priority 4 should include at least one continental partner of each programme (2 Seas and France (Channel)-England Programme) and one English partner.

The project partners can be public organisations, organisations that fall within public law, private organisations and non-profit organisations.



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Astrid Vliebergh
Project Officer

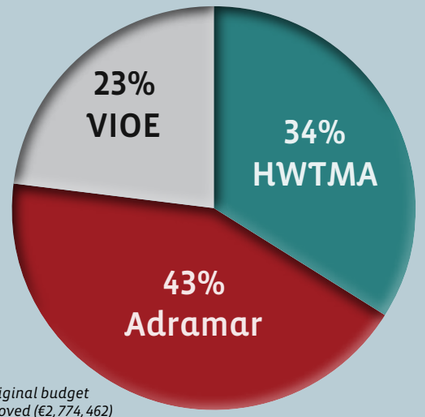
Elodie Villeneuve
Finance Officer

A word from the JTS

A2S was the first project submitted in the Common Priority. It immediately attracted the Programme's attention because of its obvious maritime dimension and its large geographical coverage.
This new partnership has a clear ambition and strong motivation to make the "Archeaological Atlas of the 2 Seas" a reality. The three partners go much further than merely collecting data together. The project is about sharing expertise and information, setting up a platfom together to make this data accessible and even undertaking surveys at sea together to discover the common maritime heritage. The project activities touch the real heart of true cross-border cooperation.

« The project activities touch the real heart of true crossborder cooperation. »

The 2 Seas Programme wishes the project the best of success in achieving its objectives and is looking forward to its innovative results!



›› *Original budget approved (€2,774,462)*
Distribution per partners

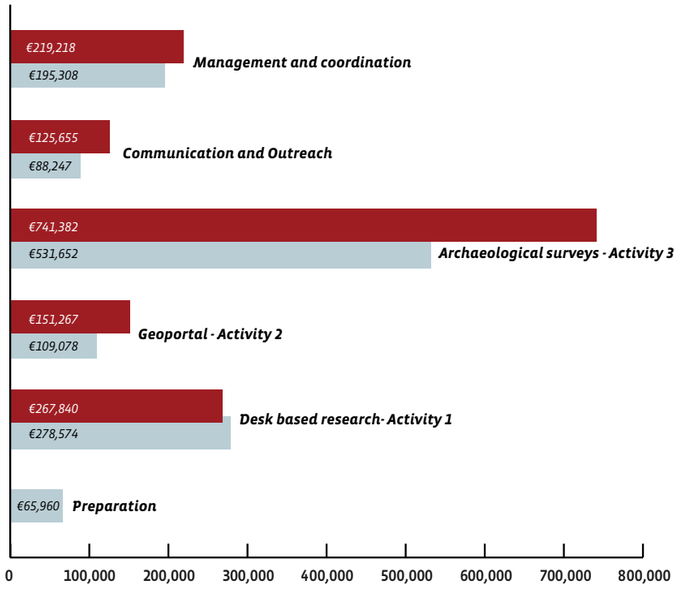
About the global budget

The Archaeological Atlas of the 2 Seas project (*A2S*) was approved on July 8 2009 by the steering committee of the INTERREG IV A 2 Seas programme, during its third call for projects. The programme's managing authority is the Regional Council of Nord-Pas de Calais.
A budget total of €2,774,462 was approved for the period from October 31 2007 to June 30 2012. This gives the ADRAMAR a provisional budget of €1,201,671, the HTWMA €948,860 and the VIOE €623,931.
This program is financed to the tune of 50% of eligible expenditure by the European Regional Development Fund (ERDF), which amounts to €1,386,954.

Financial aspects

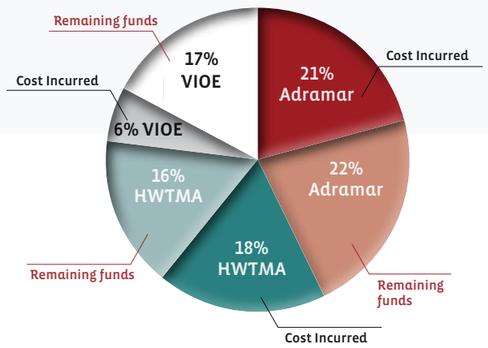
Expenditure per activity

In order to estimate its budgetary requirements, the *A2S* project was divided into six distinct Activities.
The current position shows the expenditure on the project so far is equal in amount to the remaining funds. As we are at the midpoint of the project this demonstrates that our expenditure to date has been in line with the budget predictions.



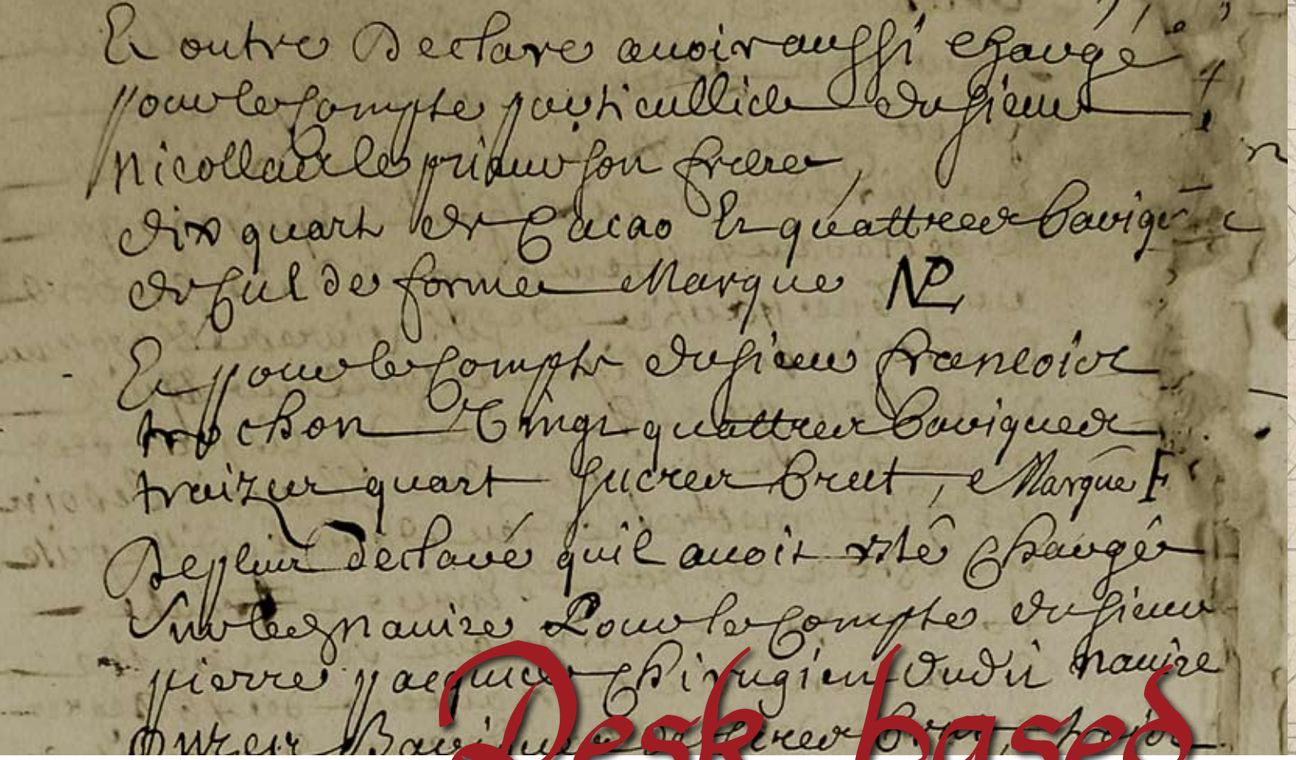
›› *Funding, Project A2S at December 31 2010*
Cost incurred at December 31 2010
Remaining funds

›› *Budget spent at December 31 2010 (€1,268,819) and remaining until June 30 2012 (€1,505,643)*
Distribution per partners



How does it work?

Requests for payment from the ERDF are made after the submission of project progress reports; these record the completion of tasks against the stated aims of the approved application.
Six progress reports, consisting of an activity and a financial report are planned. These are all to be submitted at six monthly intervals, with the exception of the first report which encompassed the preparation phase as well as the first six months of project expenditure.
After the approval of the progress report by the JTS and the managing authority, the certifying authority transfers the grant to ADRAMAR as the lead partner. In turn ADRAMAR distributes the appropriate share of the grant to the other partners.
As of December 31 2010, three progress reports have been submitted by the *A2S* team and show that at midway through the project €1,268,819 had been spent on the project, or 45,73% of anticipated costs, of which €634,673 have been provided from Europe.



Desk Based research

Activity 1

Desk based research within the *A2S* project

Research based projects like the *A2S* often refer to existing documentation to improve understanding of a site or area. Acquisition of this data is undertaken through a desk based study and constitutes the first stage of activity for the *A2S* project.

Consulting the records

During the desk based research stage of the *A2S* project, **documents, graphical, photographic and electronic information** were collected, collated and recorded. The **main sources** consulted included **national archives, inventories, hydrographic office records, primary and secondary sources**. Together these contain records of all known heritage sites.

National archives, inventories

In France, these sources are the national database of the Ministry of Culture and Communication (Patriarche) and the archives of the DRASSM. These contain information concerning terrestrial and maritime archaeological and architectural monuments, including wrecks and marine casualties.

In Belgium, the maritime archaeological data is stored in the public database of the VIOE with online access at www.maritime-archaeology.be. This data on wreck sites, maritime archaeological structures (on land and submerged), artefacts, maps etc., is all interconnected.

In England, the National Monuments Record (NMR), the public archive of English Heritage, compiles data to enable a better understanding of the historic environment. The NMR database now has a maritime record of circa 48,000 monuments, encompassing wrecks, reported casualties (i.e. a shipping loss for which the location is unknown), crashed aircraft, fishermens' snaggings, isolated finds and submerged prehistoric landscapes. The NMR database can be accessed online via 'Pastscape' at http://pastscape.english-heritage.org.uk.

The **hydrographic offices** of all three countries play a major role in providing data for research projects. They hold records of all known wrecks, with navigational information for modern shipping. The United Kingdom Hydrographic Office (UKHO) compiles wreck data to provide information to allow safe navigation, holding records of all known wrecks around the British Isles. The UKHO is also the national archive for hydrographic material and holds an extensive collection of historic charts and other material. The French Naval Hydrographic and Oceanographic Service (SHOM-*Service Hydrographique et Océanographique de la Marine*) holds the same categories of information relating to French waters and activities. In Belgium, the Flemish Hydrographic Centre (MDK - *Vlaamse hydrografie - Afdeling Kust*) hosts these data, with the side-scan sonar imagery, multibeam imagery and historical information about the wrecks. The Service for Maritime Access (MOW - *Afdeling Maritieme toegang*) also holds information about certain shipwrecks in or near the shipping lanes together with hydrographic and other data to support navigational safety.

Indirectly, these sources provide information about the use of the seas, trade links and international conflict. They can also contribute to the understanding of vessels within the natural environment. Sometimes reported casualties can lead to the discovery of a new wreck or other archaeological site. For example, in 1961 the wrecking of the fishing vessel Z 442 *André Jeannine* turned out to have been caused by the snagging of its nets on the remains of the 18th century wreck of the '*t Vliegent Hart*.

In addition to the national archives and hydrographic office records, **primary sources** have been consulted at national, regional and local levels. These primary sources include first hand accounts of those who experienced the events (i.e. through wrecking or salvage). These documents include original letters from members of the ship's crew, official reports, lists of inventories or cargo, historical maps, charts, plans and some secondary sources such as newspapers.

> *« During this stage of the project, existing documents, are collected, collated and recorded. »*

Primary sources provide important information such as the chronological framework of the period under study, general socio-economic background and information about life at sea. Specifically this can include information about maritime trade routes, the purpose of the journey, cargo characteristics, passengers and life on board. The discovery in 1977 of an annotated chart by Prof. G. Schilder in Dutch archives indicating the locations of the wrecks of the Dutch East India Company ships '*t Vliegent Hart* and *Anna Catharina*, led in turn to the discovery of archives concerning attempts to salvage the former, straight after its wrecking in 1735 in Belgian waters.

A second example is *Londonier*, a wrecked steamship lying in 40 m of water off the south coast of the Isle of Wight. The *Londonier* provides an excellent example of the close historic relationships and links between the three partner countries. The *Londonier* was a Belgian steamship which left Calais (France) in March 1918 and was torpedoed in British waters by a German U-Boat.

Another primary source of information are images, such as historical drawings, paintings, prints, illustrations and photographs. They are common from the 19th century onwards and provide a wealth of information, for example what an object looked like, its use, who used it, ship design, landscape and coastal changes.

Secondary sources are interpreted documents, produced mainly by archaeologists, historians or sometimes journalists. They can be found in scientific journals, books, monographs and newspapers and are therefore widely dispersed. These sources often give an interpretation of the general historical and archaeological context and can sometimes be compared to other archaeological interpretations and case studies.

›› *Drawing detailed plan of* Buiten Ratel *wreck site during A2S survey in Belgium*

For instance a lot of secondary documents are produced by the archaeologists and geologists who studied the submerged and buried Flemish fishing settlement of Walraversijde, situated on the beach, from the 19th century until 1975.

Both primary and secondary sources can be found in local research centres such as local records offices, universities, public and private archives, museums and libraries. Private individuals such as divers and fishermen can often possess a great deal of useful information such as artefact collections and related inventories, recovery information and research data.

Identifying and resolving issues

The desk based research mainly concerns the location of documentary and visual sources within each partner country. By working in collaboration, the *A2S* project aims to identify, locate and bring together these currently dispersed datasets. In addition to identifying and uniting data sources, project partners need to be able to access (and read) this information. A historical document in Middle Dutch, for example, would be inaccessible to most English or French partners. Furthermore access to documents held by other countries can be limited and this is something that the cross-border collaboration of the *A2S* project is helping to overcome. To help facilitate cross-country data exchange, each partner is liaising with the relevant institutions in their country and developing tools within the *A2S* project to improve accessibility.

Results of the desk based research

The various documentary sources consulted during the desk based study have provided new historical insights. However, documentary sources are inevitably partial and often fragmentary. The archaeological record is also fragmentary, but avoids the bias of human interpretation. By combining information from both documents and archaeology, a far more powerful and objective historical tool is created. Therefore, within the context of the *A2S* project, the combination of historical and archaeological data is used to enhance the existing national datasets. This information will be made publicly available through a geoportal (Activity 2), including additional wrecks or sites which are discovered (Activity 3). Links to each partner's database containing more detailed information will also be incorporated into the geoportal.

A2S Geoportal

Activity 2

A geoportal is a key output of the Archaeological Atlas of the 2 Seas project. It will provide a means of disseminating information and results, as well as allowing public engagement in the project and encouraging education in the wider field of maritime archaeology and heritage. Not only will the geoportal function as a research tool for academics, archaeologists, historians and other heritage professionals, but it will also be accessible to anyone with access to the internet.

In December 2010 worldwide internet use was estimated at 28.7% of the population and in Europe 58.4% of the population, representing 24.2% of worldwide usage! We therefore have the potential to reach a diverse audience, including perhaps those with no prior interest in heritage, archaeology or the marine environment. The most obvious audience is the sport diving community which is attracted to wrecks both for their historic interest and for the marine life that tends to flourish on and around them. Because they have the means to access and in some cases damage or remove material from sites, it is important that they are successfully engaged in order to reduce these threats. This will facilitate their appreciation of our submerged cultural heritage and educate them to respect wrecks as community assets rather than as sources of personal souvenirs or financial gain. They may also be engaged in the archaeological process, playing a valuable part in identifying wrecks and monitoring their condition. Further than this, we can raise their awareness of archaeology, which encompasses much more than ships!

They are not the only group who could benefit, others include:

- Heritage professionals, including historians, pre-historians, classicists, oceanographers, marine biologists, climatologists and other marine scientists.
- School, college or university students.
- Amateur historians/archaeologists, perhaps interested in the history of their home town and its related industry, or in a particular period or event such as the Second World War.
- Survivors/Veterans Associations, often with an interest in the wreck of a specific vessel, or a group of vessels involved in a particular event.
- The wider public.

These different groups have needs that we must acknowledge and address if we are to engage them all. The most challenging, yet in a sense the most important group, will of course be the wider public. With wide ranging backgrounds and interests and differing levels of ability and familiarity with computer interfaces, the wider public needs a spark to ignite their curiosity, easy access to the site and its content in order that their interest is maintained. There also needs to be information on the wider subject of maritime archaeology and on how to get more information or to become more active in heritage.

At the other end of the spectrum are professionals and academics whose interest is established but whose depth of interest demands a greater level of detail and more complex forms of query, possibly including spatial querying. The design challenge therefore will be to address this diversity, to make the portal accessible and stimulating to the public and yet an efficient research tool for those with deeper or more focused interests.

So far the focus of work has been on defining a functional specification for the portal, the data requirements, the technical requirements and the necessary translation alignment of terminology, chronologies and so on. This work is forming the foundation for the visible, front-end development of the geoportal interface.

What do we need to do to make it happen?

Develop and design the look and feel of the geoportal, integrating it with the project website

- → Identify hosting solution
- → Finalise required content
- → Develop static content
- → Translation, particularly technical terms
- → Identify key external data sources
- → Prepare additional data
- → Define technical specification
- → Provide relevant documentation to the developer for implementation

Stake-holder consultation has been used to understand the needs of the general public, out of which some very useful guidelines have been developed, the over-riding message was the need for simplicity of interaction yet richness of content.

In many cases, the search functionality associated with modern web mapping interfaces can be confusing and cumbersome. This presents a challenge that we have had to address. The solution is a research tool that is utterly simple yet expandable; the user can search one field without being encumbered by a cluttered, complicated interface, or build a complex query, utilising several fields and conditions. The interface around this will be designed such that it is as familiar as possible, taking cues from popular interfaces such as Google Maps. In this way, the maximum number of users can successfully interact with our portal from the outset.

The portal will certainly be rich in content! In addition to the descriptive, tabular data that forms the partner's databases, there will be photographs, site plans, historic maps and charts, video and other media. This will not only add value to the data but will make the data more accessible. Photographs and site plans will aid visualisation of sites, video will further help the understanding of scale and the environment in which the sites now exist. A visual glossary of terms will help people to understand the data, in particular the technical aspects of it. Additional mapping layers from external WMS and WFS servers will add context and aid orientation.

Preview of geoportal

Search

General information on the site (trilingual)

- *Name*
- *Type*
- *Period*
- *Date*
- *Location*
- *Depth*
- *Summary*

More information

1

More detailed information (unilingual)

- *Broad type*
- *Propulsion type*
- *Nationality*
- *Cargo*
- *Home port*
- *Hull material*
- *Artefacts*
- *Site type*

Link toward National Database

2

Layers | Advanced Research | Legend

MAIN LAYERS
- ☑ Satellite
- ☐ Marine chart

OLD CHARTS
- Belgium
- England
- France
  - ☑ Carte de Ogée (1771)
  - ☐ St-Malo to Cap Frehel (1760)
  - ☐ ...

SITES LAYERS
- ☑ Wrecks
- ☐ Submerged Landscapes
- ☐ Fishtraps
- ☐ Submerged Settlements
- ☐ ...
- ☐ All sites

›› *www.maritieme-archeologie.be*

›› *www.atlasponant.fr*

›› *www.hwtma.org.uk/digital-archive*

Link to the partners databases.

3

›› Hermine Bretagne, *Adramar's research vessel during the Geophysical survey off the coasts of Saint-Malo (France)*

Archaeological surveys

Activity 3

Archaeological surveys form a key part of the data gathering activities for the *A2S* project in each of the three partner countries. The surveys allow a high level of detail to be collated relating to individual archaeological sites, enabling a deeper understanding of the events leading to the site formation and of the environmental factors which have led to the current condition of the site. The choice of areas for survey were determined by the partners, based on the analysis of data collected during the desk based research stage, where the compilation of data from national archives, hydrographic charts, existing geophysical resources and reports from avocational divers allowed the evaluation and prioritisation of targets for survey. The surveys have enabled the ground truthing of data gathered during the research, providing information as to the accuracy of site positions, the nature of the remains and the qualitative and quantitative importance of the deposits. Once completed, the surveys have also provided further information which has supported ongoing desk based research.

The surveys have formed a vital part of the co-operation between the partners, building an international team of maritime archaeologists and offering an opportunity for professional archaeologists and avocational volunteers from each country to exchange know-ledge and previous experience. This has enabled the development of improved methodologies and a move towards shared international standards. The inclusion of students within the surveys has allowed for further collaboration between the partners. Student placements from each partner country have benefited from training and involvement with the international maritime archaeological team working on the project.

> « *Once completed, the surveys have also provided further information which has supported ongoing desk based research.* »

The surveys have taken two forms: geophysical assessments and diver inspection. Geophysical surveys in the marine environment include multibeam sonar, magnetometry and sub bottom profiles. Diver inspection encompasses identification and clarification of anomalies which have been detected using geophysical survey; measured surveys of archaeological features; video and photographic surveys of extant remains; biological surveys of the impact of wreck sites on the local seabed environment; excavation and coring of the seabed associated with sites and the ongoing monitoring of the stability of archaeological sites. The intertidal environment has also been investigated as part of the *A2S* project and can similarly be examined using both geophysical methods and physical survey techniques. The choice of tools and methods used will differ from site to site and are dependent on the type of site and the condition of the associated archaeological features.

The survey methods have varied between the partner countries, because the agenda for each partner has been decided according to their own research priorities and national programmes. In France, ADRAMAR has completed geophysical surveys using side-scan sonar and magnetometry in areas where high level geophysical data did not previously exist. The results of these surveys have enabled the identification of targets for further diver investigation. In Belgium and England, pre-existing geophysical data has been available to the partners, allowing the targeted investigation of previously located wreck sites and anomalies. In Belgium this geophysical data set has al-

What is 'Ground Truthing' and why is it necessary?

Ground truthing is the direct visual verification of features or anomalies identified through remote survey techniques or sources such as archival and anecdotal evidence. Obtaining information from a real world feature or deposit aids the interpretation and analysis of information from remote sources. In maritime archaeology ground truthing is usually carried out by a diver, or remotely operated vehicle (ROV). In addition to detailed measurements leading to the creation of site plans, ground truthing survey can also encompass photographs, video footage and information from samples and cores. Detailed observations of a site can give insights into its identity, the extant of remaining archaeological features, and provide possible explanations regarding site formation and stability.

The 18th century wreck site of the Buiten Ratel sandbank in Belgian waters was an ideal subject for ground truthing. After 10 years of artefact recovery and excavations by sports divers, the VIOE thoroughly studied the recovered artefacts and dated the wreck (sunk after 1740) and identified its origin (Netherlands). Until this study hardly anything was known about the wreck itself. Thanks to cross border co-operation during the survey in 2010, the visible wreck remains were recorded in detail for the first time. The site plan and on site observations are the first steps towards a better understanding of the wreck site, which, when combined with the results of the archival research and the analysis of the geophysical data, will hopefully give further indications as to its identity.

›› *Recording guns on an archaeological site (France)*

lowed for detailed assessment of specific wrecks resulting in the production of the VIOE's first measured site plans. The maritime data is also accompanied by intertidal information relating to the partially drowned village of Walraversijde and has allowed for its continued investigation. In England, side-scan sonar survey was utilised for the location, identification and confirmation of the extent of formerly unknown sites; previously located wreck sites requiring archaeological assessment were identified for diver survey and investigation; and work from earlier HWTMA projects was built upon through site excavation and continued monitoring.

The data gathered during the surveys will be presented through the production of archaeological reports, the provision of information on the *A2S* project website and most importantly, will feed into the individual project partner databases and therefore become part of the information available for public access through the project geoportal. Any relevant information gathered will also be reported to the national archives of each individual country, to aid in the management of the underwater cultural resource. The surveys have served to both enhance existing records and discover new sites. At the same time they have gathered a range of data which will allow the production of outputs such as videos, photographs, site plans and public displays wich are more accessible to the general public.

Bouldnor Cliff site

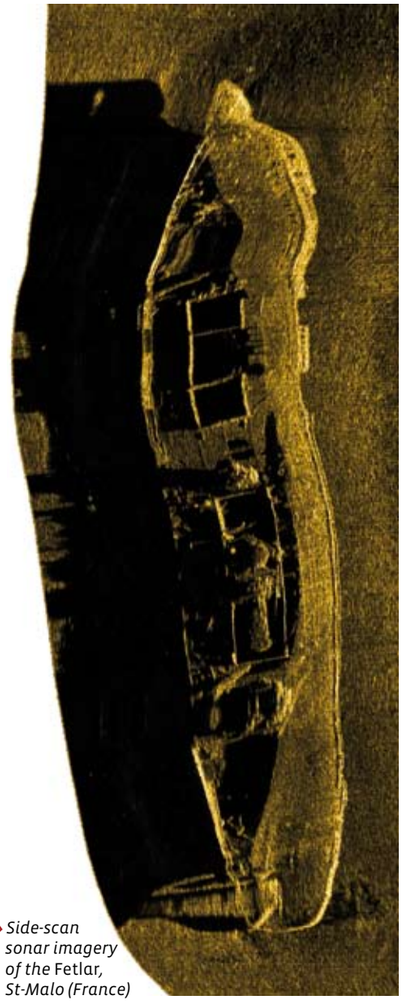
Bouldnor Cliff lies 11m underwater off the Isle of Wight. Worked wood, hearths, flint tools, food remains, twisted plant fibres and an enigmatic assemblage of intercalated timbers dating to c.8,100 years before present represent just some of the material recovered from beneath the water to date.
The investigations at Bouldnor Cliff during 2010 were conducted with an international team of twelve and three boats. Monitoring pins were laid along the eroding section while threatened timber features were rescued and recovered to the surface. The operation was filmed and featured in the BBC documentary series 'A History of Ancient Britain' which was aired in the UK in March 2011.
Bouldnor Cliff is currently a unique site but represents an example of what may remain buried at many similar locations off our current coastlines. It demonstrates technological abilities that remain 2,000 years ahead of anything found in mainland Britain.
Work on the submerged archaeological and the palaeo-environmental resource has unravelled the processes that have preserved and then exposed the site and has been instrumental in developing new methods to recover submerged prehistoric archaeological material.

Monitoring techniques, how and why?

As previously stated, archaeological surveys can take place in different ways, including geophysical assessments and diving surveys and for different purposes. They can also be designed to detect and monitor changes on a site.
Under water sites are constantly changing and very susceptible to human and natural processes, some of which can threaten a site whilst others protect it. Regular monitoring helps us to understand and sometimes predict these changes. For instance, sediment can cover wrecks and protect them from bio-degradation or destruction by fishing nets, but this also makes sites less accessible for research.

During previous surveys on different wrecks in England and Belgium, fixed points have been installed against which the sediment level can be measured regularly. Photographs and video give a permanent record of the site at a specific moment in time. These records can be compared with older and more recent images, which for example might show a change or displacement of wreck parts or artefacts. This can also be achieved by comparing previous plans with the current situation. Additionally when side-scan sonar and multibeam images of a complete wreck are taken regularly, they are ideal for monitoring the evolution of the wreck's condition over a given period of time.

›› *Diver recording on the Bouldnor Cliff site (England)*



›› *Side-scan sonar imagery of the* Fetlar, *St-Malo (France)*

Geophysical Methods

During the archaeological surveys carried out by the *A2S* team, different remote sensing techniques have been applied. Acoustic and magnetometric devices have been deployed to better understand the sites surveyed.
The most common marine acoustic techniques used as investigative tools for archaeological studies are side-scan sonar and multibeam systems, which give a detailed image of 'seabed' contours. The high frequency pulses reflected by the archaeological structures are recorded and processed creating an image that enables archaeologists to see the remains of a shipwreck.
When a site is buried under the seabed, it may be detected through the use of sub-bottom profiling techniques. These enable scientists to obtain a precise stratigraphy without excavating the site. A towed transmitter emits low frequency pulses which are reflected by the seabed and deeper sediment layers. As the boat moves continuously ahead, a towed receiver records the reflected signals, which are processed to produce a vertical cross sectional image of the sediment layers below the survey vessel's course.
Some archaeological sites, such as shipwrecks, have iron structures that affect the magnetic field of the Earth locally. These variations can be recorded by a magnetometer enabling archaeologists to detect the site.

Biological surveys of archaeological sites

Wrecks often develop locally unique biological communities which make them of particular interest for conservation. It is beneficial to incorporate an assessment of the biological profile of the wreck site alongside the archaeological one, gathering information on seabed habitats and associated marine wildlife. Biological profiling allows a full understanding of the processes that may be affecting the long-term stability of a site. This profiling is undertaken by specialist marine biologists. The Hampshire and Isle of Wight Wildlife Trust (HIWWT) have conducted such work on both the *Flower of Ugie* and the Landing Craft Project for HWTMA.

›› A2S' European Heritage Day event at St-Malo (France)

Communication & outreach

›› HWTMA's education and outreach van (England)

Communication is very important to the project in order to ensure the durability of the research processes to which we are committed.

Its main aim in the future will be to extend collaboration to other countries and partners.

Above all it is necessary, to convince scientists and those providing the funds of the importance of such a collaboration, as well as to make the data collected available to the public of all ages.

Starting from this premise, we have developed a communications strategy for the entire project duration. Communication will be at several levels and in different forms, depending on the target audience.

Peer review is undertaken by the project steering committee through meetings, which allow for validation of the progress of the project to date and suggestions for future developments. The *A2S* team regularly take part in lectures and conferences in order to present information and results about the project. In addition, other maritime and marine archaeological enthusiasts are informed and involved according to with their abilities (diving enthusiasts, wreck discoverers, etc.).

Following the verification of the scientific results (survey and desk based research), the data is made accessible to a wide range of audiences through scientific and popular publications; exhibition materials; lectures; and school visits and education packs.

The diverse methods of communication used in this project demonstrate the importance of the generous funding which has made it possible.

Some examples of communication media:

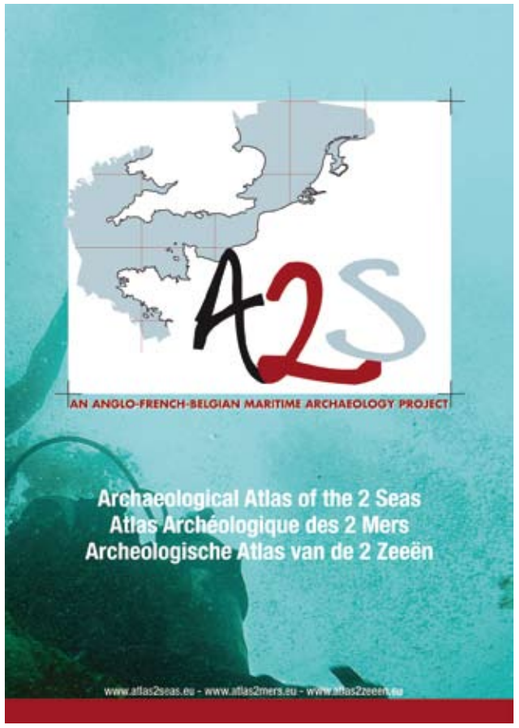
Poster presenting the *A2S* project →

Outreach,
a major aspect of the *A2S* project

At the heart of the *A2S* project is the promotion of our common heritage to European communities. This will be achieved through public outreach and education. The partner countries are working collaboratively to plan and deliver a programme of public outreach and educational initiatives across all three countries. Through shared experience and exchanging best practice, the cross-border outreach programme will include an international *A2S* mobile exhibition, touring the coastal communities of England, France and Belgium. The Maritime Bus will contain posters, videos, images and artefacts from heritage sites in our common seas and provide an opportunity for project partners to meet the European general public to tell them about the *A2S* project. The touring exhibition will tell the story of the *A2S* project and the work of the partner countries, show some of the project results and promote the online geoportal. Alongside the public outreach programme, the *A2S* project is exploring the educational potential of our common maritime heritage through the development of a tri-nation schools programme. While there are significant differences in the education systems of each country, project partners recognise many common experiences in developing educational initiatives and working with schools. During the second half of the *A2S* project, partner organisations will be working closely with one school in each partner country. Mirroring the structure and ethos of the actual project, students in all three countries will work collaboratively, across borders, to research a shipwreck in the English Channel. This offers opportunities for real-time international collaboration between schools and pupils in all three partner countries.

Web Site: www.atlas2seas.eu/

›› Hermine-Bretagne: *vessel open day St-Malo (France)*



↑ **Project information leaflet**

→ **Press release**

OPÉRATION MEKNÈS

Commémoration du 70ème anniversaire du torpillage du Paquebot

C'est durant la période trouble du début de la deuxième guerre mondiale que se déroula le 24 Juillet 1940 le dramatique naufrage du paquebot français *Meknès* torpillé par une vedette lance-torpille allemande en patrouille dans les eaux de la Manche alors que l'armistice entre l'Allemagne et la France était signé depuis le 22 juin 1940.

Apart apparenté de Southampton le 24 juillet à 19h30 avec à son bord : 1100 marins français démobilisés à la suite de la saisie de leurs navires par les Anglais, le 3 juillet au matin et 104 hommes d'équipage, le paquebot fait route en direction de Marseille, sa destination finale.

Les navire arbore de chaque côté de sa coque son patronyme et sa nationalité : MEKNÈS-FRANCE peints en grandes lettres et éclairés par de puissants projecteurs. Son pavillon national est volontairement laissé hissé pour cette traversée. Les tapes des hublots ont également été tôlées.

Le Meknès se signale donc de « mille feux » à l'intention des bâtiments militaires allemands patrouillant en Manche. Le voyage s'annonce paisible et confortable pour les passagers comme en temps de paix.

C'est vers 22h50, alors qu'il navigue approximativement à 15 milles nautiques de Start Point au large de Portland, qu'une première salve de mitrailleuses brise des vitres et blesse des passagers. Le Meknès stoppe aussitôt en avertissant de sa manœuvre par des coups de sifflet et des signaux lumineux en morse.

Dix minutes plus tard, une torpille l'atteint par tribord et provoque une violente explosion. Réalisant l'importance des dommages, le commandant ordonne l'évacuation immédiate et lance par radio un S.O.S.

Rapidement, le navire se brise en deux et sombre en dix minutes dans les eaux noires et calmes de la Manche. La lune vient de se lever et laisse alors découvrir aux naufragés luttant pour leur survie, toute l'étendue du désastre. Au petit matin, après avoir passé 9 heures dans l'eau, les naufragés sont repêchés et ramenés en Angleterre par torpilleurs anglais déployés sur la zone. Le naufrage aura causé la mort de 425 hommes dont 396 passagers.

Autant de «victimes d'Â de la malveillance ou à de la négligence rencontrées dans la chaîne de commandement, entre les autorités françaises et anglaises, quant à la diffusion et la prise en compte d'un avis émis par les autorités allemandes. Cet avis stipulait qu'à partir du 23 juillet tout bâtiment battant pavillon français rencontré hors de Méditerranée sans que ses mouvements aient été annoncés, serait traité en ennemi par la marine allemande.

Ces faits s'inscrivent suite à la signature de l'armistice du 22 juin 1940. À la lecture des conditions d'armistice entre la France et l'occupant, les Britanniques comprennent malencontreusement que la flotte française sera sous le contrôle des Allemands puisque la plupart des ports d'attache se trouvait en zone occupée. Churchill lance alors l'Opération Catapult visant à saisir la flotte française ou à la neutraliser dans tous les ports de guerre et en particulier à Mers-el-Kébir le 3 juillet 1940. Les relations avec l'Angleterre deviennent alors conflictuelles et vont jusqu'à l'évocation d'une déclaration de guerre par le gouvernement du maréchal Pétain.

← **Press article**

50 octobre 2010

Epave

L'ÉPAVE DU MEKNÈS SORTIE DE L'OUBLI 70 ANS APRÈS

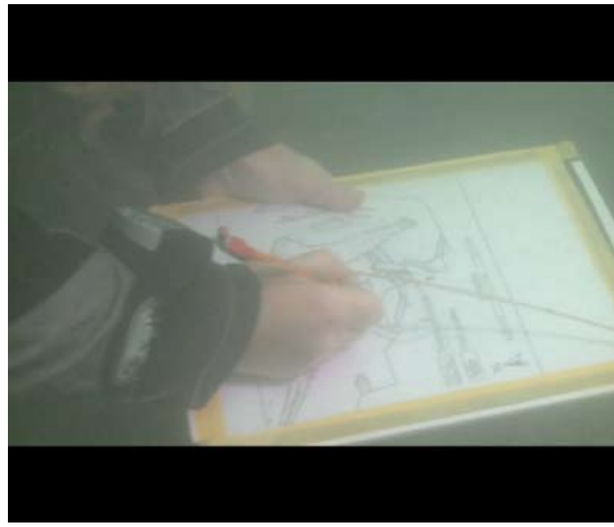
EN MANCHE, AU MILIEU DU RAIL PAR PLUS DE 60M DE FOND !

70 ans après son naufrage, le paquebot Meknès sort de l'oubli, grâce à une équipe de plongeurs qui n'ont pas hésité à braver les dures conditions de plongée de la Manche, et plus particulièrement du «rail». Une exploration inédite !

↓ **Conference Steering Committee**

›› *First A2S Steering Committee meeting in Brussels (Belgium)*

↓ **Videos**



›› *Diver examining the boiler on SS* Coquetdale (England)

New developments

Increasing our understanding

Collaboration and the sharing of expertise between the partners has created a fertile environment for the development of new ideas. The core activities of the *A2S* project have expanded to include the evolution of new initiatives based on education and community involvement that are being introduced as the project runs its course.

The research and data gathering undertaken during the project has highlighted the richness and magnitude of the submerged cultural heritage in our common seas. Historically, ships have been the largest and most sophisticated pieces of technology produced by nation states. A warship patrolling the high seas can act as a statement of power while the evocative image of a schooner under full sail is a testimony to human skill and endeavour. Such sightings may be rare today but below the surface of the water thousands of shipwrecks remain in what has become the best stocked museum in the world. Some of these wrecks lie almost intact in their serene, watery grave while others are broken and damaged; reflecting the tragedy that resulted in their loss. This hidden archive tells the story of a shared past that shaped modern Europe.

> *« This hidden archive tells the story of a shared past that shaped modern Europe. »*

Unfortunately, the resource is hard to visualize and it is difficult for the non-diver to appreciate. This is all the more regrettable as the public have a clear appetite for submerged cultural heritage in the form of both shipwrecks and submerged landscapes. This fact is demonstrated by the high number of television media programmes commissioned to record stories relating to both human losses at sea aboard ship and the drowning of ancient sites of human settlement. The interest is also reflected by the large community of volunteers and avocational archaeologists who, when given the opportunity, are keen to get actively involved. Attention has been paid to the work of all the partners in the project by the media and they have all benefited greatly from the good will of volunteers.

The cocktail of a rich resource and an enthusiastic public has proven very successful and it is becoming apparent that this combination has the potential to deliver a great deal more. To address this, the project partners are looking to build on the results obtained so far by investigating new sites, collecting more video footage, producing more site plans, conducting more collaborative research, increasing volunteer involvement and continuing to enhance databases for public access. A professionally produced film is planned to reflect the work of the project partners and to demonstrate the variety of archaeological material on the seabed. Footage will be edited for educational purposes and be used as a resource to support the study of subjects within the national curricula of the partner countries.

The potential for maritime cultural heritage material to be used by educators is something that will be reviewed and developed during the second half of the project. The project team plan to work with a school in each partner country to research the SS *Londonier*: a Belgian steamer that was sunk in British waters in 1918 while under charter to the French government (see Activity 1 in this report). The project will actively link schools from the different countries enabling them to conduct unique research around a common theme and be part of an international underwater archaeological investigation.

›› *The English Channel and the North Sea, custodians of our underwater cultural heritage, the maritime area of the cross-border collaboration of the* A2S

Conclusions & future objectives

The progress made during the first half of the *A2S* project has been outstanding and the results are contributing significantly to the understanding of our submerged cultural heritage. The fieldwork has led to the discovery of a range of new data that has been integrated with the desk based research. Geophysical survey is helping to locate shipwrecks, provide dramatic images and is revealing new areas of interest. Diving on these anomalies and recording them is providing high levels of detail, all of which is being integrated into the partner databases for access via the trilingual geoportal.

This pioneering work is demonstrating how international cooperation and a streamlined methodology can recover a wealth of information. It is showing us that the more we look, the more we find and the more we are able to access the secrets from this hidden world. However, to realise the full archaeological potential and appreciate the full magnitude of the submerged resource more work will be necessary beyond the term of this project.

The project has demonstrated the importance of geophysical survey tools and ground truthing, therefore a goal must be to engage with organisations that can provide, or gather information and images from the seabed. To get the greatest benefit from such data there would be a need to extend the recording programme demonstrated by the *A2S* project. This could be achieved effectively and economically with more participation from the diving community under the guidance of trained maritime archaeologists. Such a programme would contribute towards a holistic understanding of the cultural heritage while increasing the skill sets for a cross section of people who, if given the chance, could help enhance knowledge of our submerged cultural heritage assets. The results would increase opportunities for academic study, help raise awareness and supply engaging material for education resources. It would also provide baseline data that could inform cultural heritage managers and marine spatial planners as European nations continue to exploit their common seas.

> *« To realise the full archaeological potential and appreciate the full magnitude of the submerged resource more work will be necessary beyond the term of this project. »*

The *A2S* project is demonstrating a truly collaborative approach that is bringing Europe's submerged cultural heritage to light.

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ENGLISH HERITAGE

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Ille & Vilaine LE DEPARTEMENT
Morbihan Conseil général

AQUA LUNG
Armor·lux

›› *Hull of the shipwreck*
Fetlar *(France)*