Newsletter N° 1
October 2003

Information System for Marine Aquatic Resource Quality

Welcome

WELCOME to the 1st i-MARQ Newsletter which focuses on the following items:

- An introduction to i-MARQ
- A report on progress on the project so far
- The results of the first formal Review of the project by the European Commission
- An indication of the work being undertaken over the next months

For more info or to contact us:

Web-page:
http://www.marinetech.co.uk/projects/IMARQ.htm

Forum web-page:
http://www.plwmarine.co.uk/phpBB2/index.php

Content

What is i-MARQ

A. The i-MARQ Project

The i-MARQ project aims to develop a Geographic Information System (GIS) which can exploit diverse data resources in order to deliver 'best estimate' information on the environmental quality of coastal waters.

i-MARQ is a European collaborative project, involving a variety of partners from public and private sectors, with part-funding from the EC (Information Society Technologies). Marinetech South Ltd is the technical coordinator.

The project is funded under the IST programme and has been running since June 2002.

B. The Need for i-MARQ

Marine environmental monitoring is undergoing rapid and sustained growth. A wide range of users and administrators of marine resources require concise and easily understood information as an aid to decision making, in order to maintain and enhance environmental quality in the face of growing pressure on resources.

In particular, tourism in coastal areas is demanding ever increasing environmental quality and requires daily and seasonal information on coastal environment quality and stress. These trends create a rapidly growing demand for the ability to process high volumes of raw data; to extract highest quality information; and to present it in a form which maximises usability and understanding.

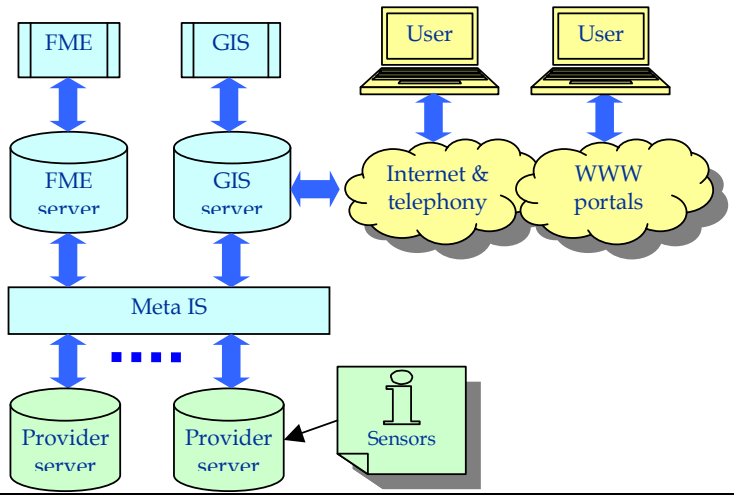
i-MARQ will address this need, helping companies and authorities to anticipate problems and minimise the impact of their activities, whilst also helping coastal tourism to develop sustainably with enhanced public confidence in the environmental integrity of recreational waters. The aim is to present relevant and reliable information in a form which maximises its usability.

C. The i-MARQ Process

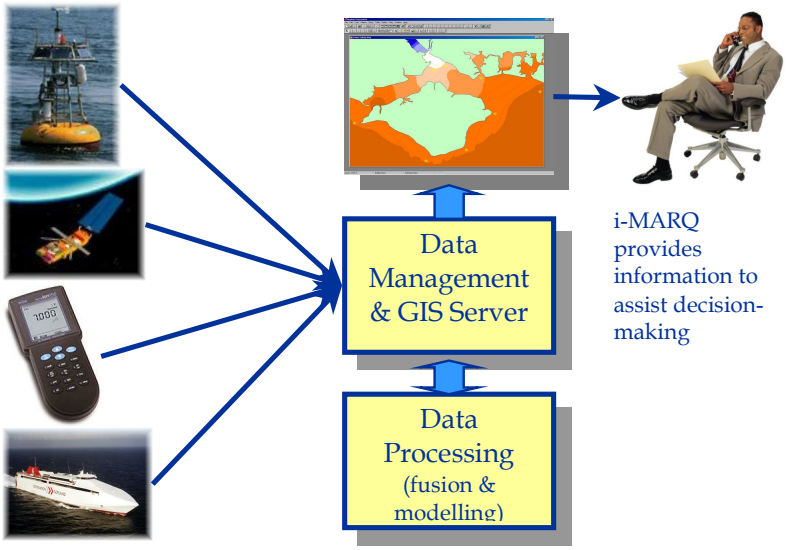
The overall sequence of actions is:

- Specification of a system for monitoring & displaying coastal & estuarine water quality. This will be based on the needs of significant user categories, defined through a combination of survey and analysis
- Development of a system which meets the above specification, using novel techniques in data processing, management & GIS. This will offer significant improvement in timeliness of information, compared with existing on-line systems which present information based on historic, regulatory measurements
- Piloting of the system and evaluating its performance against user requirements. This will generate pilot operating experience in two different EU coastal and estuarine regions: one coastal region in the Mediterranean; and an estuary system on the South coast of England
- Planning for the enhancement and commercial application of the validated system. The intention is to define a feasible action plan for future development of a commercial system.

By integrating data from many sources and models, the system will be designed to meet the varying information priorities within different markets. Development of the system will require novel advances within a GIS context of data management, fusion and modelling techniques, which have not been achieved in previous work.

	D. The i-MARQ Benefits Delivery of water quality information designed to meet decision-making requirements of public and private sector users and individuals. Development of technologies for fusion of data from diverse sources, integrated with phenomenological models, in the form of GIS-based tools. Configuration of a scaleable meta information system allowing access to diverse data resources. Validation of these techniques within two pilot regions, in close co-operation with many users and data providers.
Progress So Far	The project has stayed on schedule and has achieved all its planned deliverables. The period has seen the transition from specification of the system to meet user requirements through to the actual development of a prototype system. There has been excellent technical co-ordination of the project, with those responsible for the software development linking with those responsible for the delineation of data input requirements and the production of the data fusion algorithms.
Review Results	The project was well received by the reviewers and the technical progress in terms of the advanced information technology was evident to the reviewers. The reviewers suggested identifying a few potential customers/end-users and working on the system to provide system variants which they can use as a step towards the future commercial exploitation of the potential of the system. This path is being explored. If any local authorities, commercial organisations, tourist bodies, and enforcement agencies are interested in finding out more about i-MARQ then please contact us.
The System • **Graphical Description**	The system may be described in schematic terms as follows: 

The system may be pictured in more user-friendly terms thus:



- **Pilot Areas**

Two regional pilot schemes are being set up to prove the i-MARQ system and technologies. These are in France and in the UK.

The French pilot scheme along the Cote d'Azur will address water quality priorities in near-shore waters and also in the offshore cetacean reserve.

The UK pilot scheme in the Solent will include several nitrate sensitive zones and some major industrial and port facilities.

In addition the German Helgoland Sea will be used to validate the data-processing techniques.

- **Relevant EU Directives**

The urgency for local authorities and other sea water users to concern themselves with water quality – and hence the requirement, we believe, for the i-MARQ system – is strongly related to the various Water Quality Directives emanating from the European Union.

http://europa.eu.int/comm/environment/water/index.html

The following pieces of legislation have particular relevance to the i-MARQ project:

Bathing Water Directive Council Directive 76/160/EEC on Bathing Water Quality.
And proposed revision - COM (2002) 581

	Urban Waste Water Directive - Urban Waste Water Treatment Directive(91/271/EEC) **Nitrates Directive** - Directive 91/676/EEC on nitrates from agricultural sources **Water Framework Directive -** Water Framework Directive (2000/60/EC)
Next Steps	There are a number of specific steps now to be undertaken by the project. These are: • the further development of the prototype system into the evaluation phase • the close involvement of users/potential customers in he testing and evaluation of the prototype system • further development of the system following the evaluation phase • detailed evaluation of the system by a small number of key, committed users • final testing of the system with users, via a beta-testing stage • production of a detailed exploitation plan, including its implementation and the subsequent roll-out of a commercially viable i-MARQ system.

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