Web-GIS usage and users– Case studies from Ireland

Kathrin Kopke
Coastal and Marine Resources Centre
Ireland
k.kopke@ucc.ie

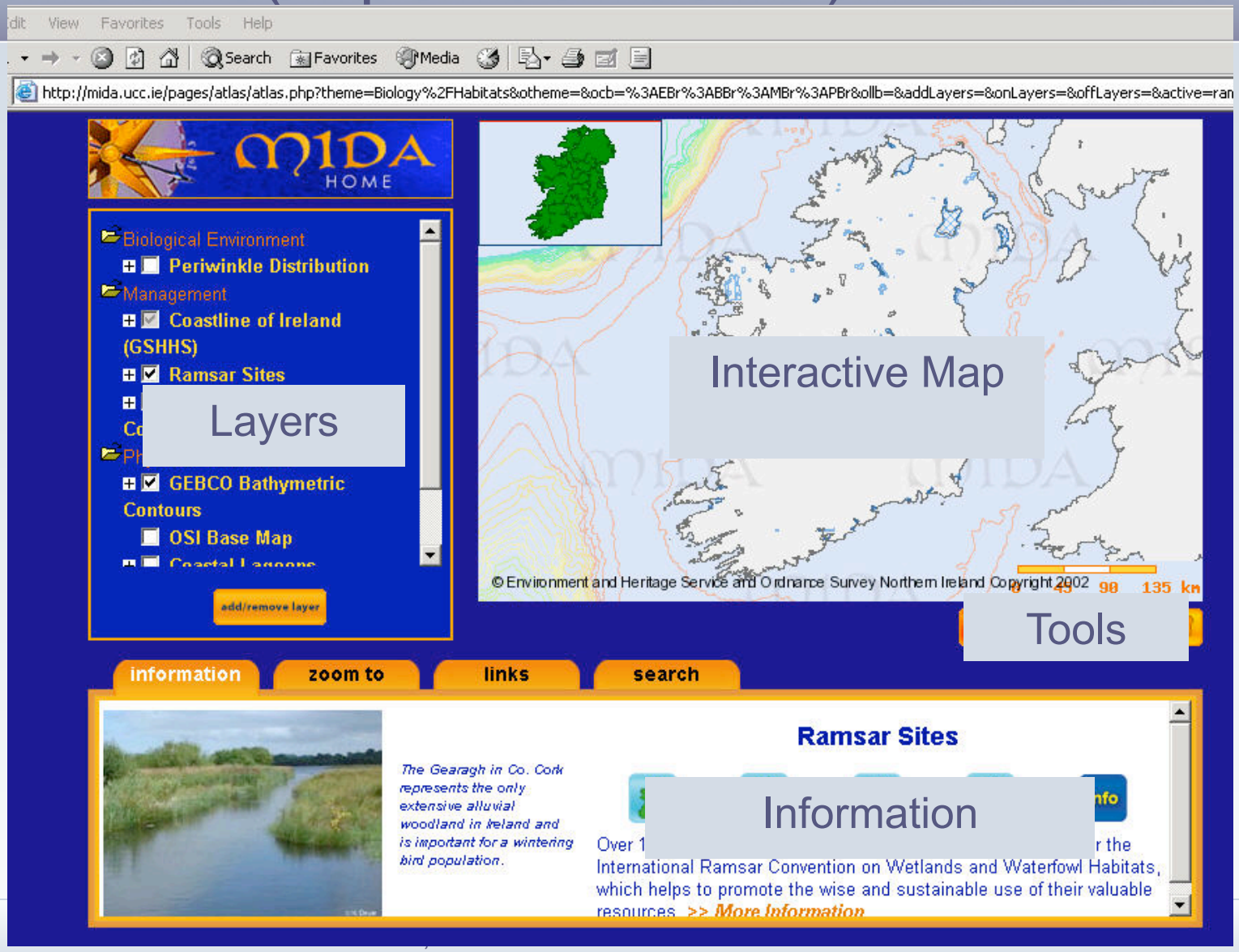
Overview

- MIDA
  - Introduction
  - Facilitation of different user groups
  - Publicity and user feedback
  - MIDA users and uses
  - Challenges
- LIMES
  - Introduction
  - LIMES user group and project idea
  - LIMES idea
  - LIMES user group and demonstration interface
  - Challenges

The Marine Irish Digital Atlas (http://mida.ucc.ie/)

- Vision: MIDA should become a key on-line resource for all who are interested in coastal and marine information and data for Ireland
- MIDA is a single source where people interested in coastal and marine information can visualise and identify pertinent geospatial datasets and determine where to acquire them.

The Marine Irish Digital Atlas (http://mida.ucc.ie/)



Facilitation of different user groups

- Target Audience: Government Agencies, Local Authorities, Commercial, Education/Research, Tourism, NGO, Public
- Example student

Facilitation of different user groups

-
-

Facilitation of different user groups

Facilitation of different user groups

home | about MIDA | information | participants | news | contribute | metadata | links | contact

go to atlas

Information Menu

- Physical Environment
  - Elevation & Depth
  - Manmade Infrastructure
  - Oceanography
  - Climate
  - Hydrology
  - Physical Geology
    - Seabed Surface & Subsurface
    - Terrestrial
    - Natural Coastal Features
    - Soils
    - Coastal Erosion
  - Landcover & Landuse
  - Images of Physical Environment
- Management
- Biological Environment
- Socio-Economic

Natural Coastal Features

Printable Version

Overview | Details | Data Sources | Links | References

Estuaries · Saltmarshes · Sea cliffs · Rocky shores · Beaches · Lagoons

Saltmarshes

Saltmarshes are flat, poorly drained areas of land in intertidal regions subject to periodic flooding by tides. They are typically found between the upper limits of the neap and spring tides in protected bays, estuaries, and other sections of sheltered low energy coastal environments with medium or large tidal ranges (>3m) where sediment becomes deposited on intertidal mudflats under slack water conditions. Salt marshes may also develop on coastal peat deposits. These are mainly confined to the west coast of Ireland and often occur in areas where blanket bog has been encroached by the sea as a result of rising sea levels over long periods of time, frequently combined with the more recent cutting of peat.

Usually the upper parts of the marsh are more elevated so they are only totally inundated at the highest tides. The lower zones are inundated more frequently, especially where

Facilitation of different user groups

Professional

Killarney National Park is one of the most popular tourist destinations in the country.

National Parks

info view

National Parks are of scientific importance and often contain very spectacular scenery. The parks are maintained by Ireland's Department of Arts, Heritage, Gaeltacht, and the Islands. In N. Ireland there is discussion on designating its first national park in the Mourne area. >> *More Information*

At Lough Hyne in Co. Cork, rapids are created in the narrow channel leading to the sea when tidal levels inside and outside the lough are different.

Nature Reserves (Rep. Ireland)

info view

Nature reserves are protected areas which are important for the conservation of flora, fauna and various natural features. The network of reserves protects important and unique areas such as woodlands, boglands, grasslands, sand dune systems, bird sanctuaries, coastal heathlands, and marine areas. >> *More Information*

At Lough Hyne in Co. Cork, rapids are created in the narrow channel leading to the sea when tidal levels inside and outside the lough are different.

Nature Reserves (N. Ireland)

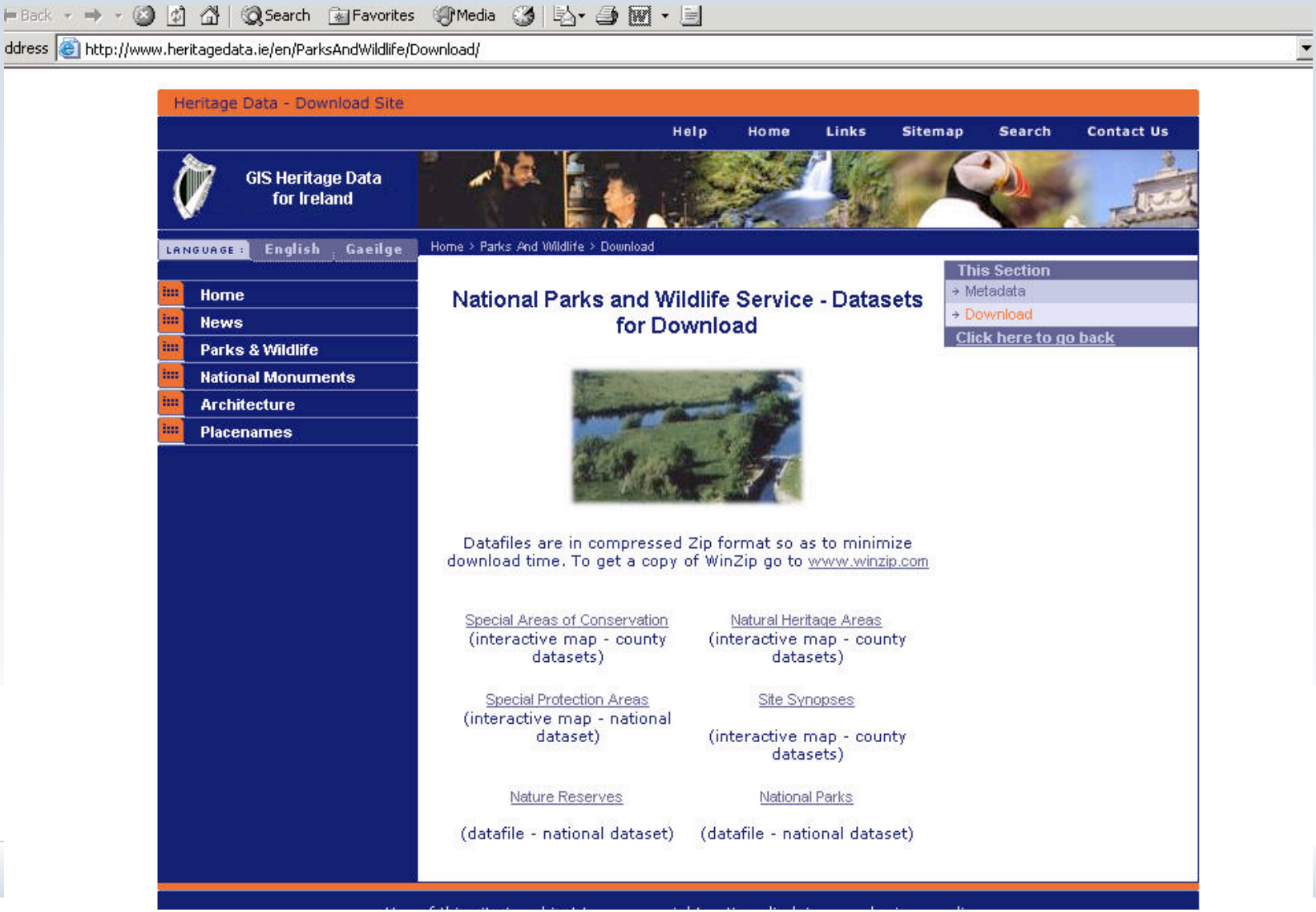
info view

Nature reserves are protected areas which are important for the conservation of flora, fauna and various natural features. The network of reserves protects important and unique areas such as woodlands, boglands, grasslands, sand dune systems, bird sanctuaries, coastal heathlands, and marine areas. >> *More Information*

Natural Heritage Areas (NHAs)

Facilitation of different user groups

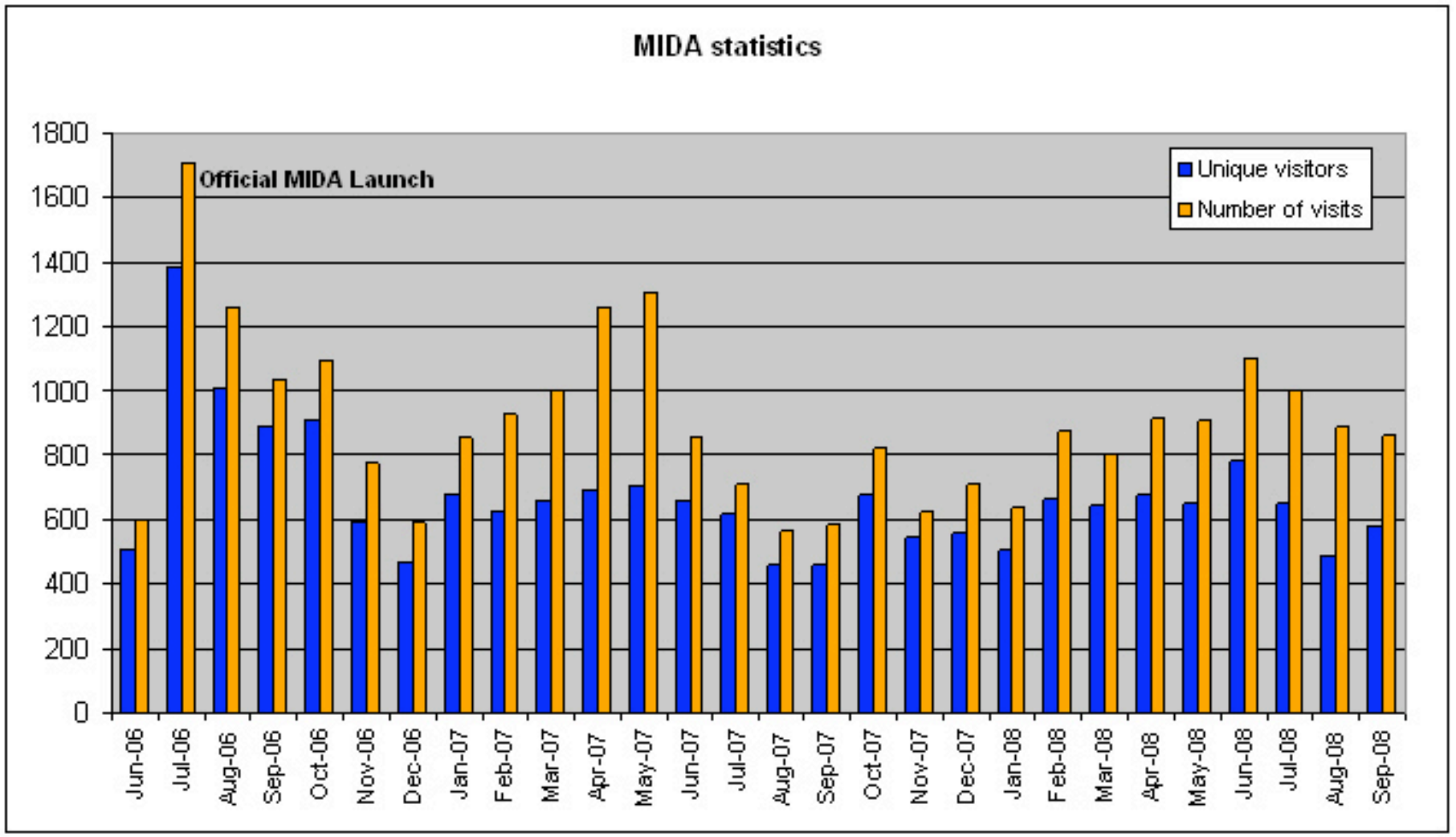
Facilitation of different user groups



Publicity and user feedback

- Workshops: consultation of cross-section of end-users throughout the MIDA design and development phase
- Because the potential end-user input can ensured that the Atlas would meet user needs e.g., participants expressed interest in spatial data for specific additional themes; to date; over 85% of those themes suggested contain spatial information
- Face-to-face meetings more effective than anonymous web-based surveys as a means of gathering feedback
- Initial promotion at specialist conferences and in journal articles in development phase
- Atlas brochure was published and disseminated widely

Publicity and user feedback



MIDA users and uses

- MIDA user statistics: most visitors are from the Republic of Ireland, followed by visitors from the UK and the USA
- High UK interest was expected as the MIDA was a cross border collaboration featuring island-wide datasets as well as some specific Northern Irish data layers
- 2008 MIDA statistics showed the most popular directly downloadable datasets were from the socio-economic activity section, specifically water-based recreation
- Keen interest in spatial data regarding water based recreation indicate that this type of information was not readily available elsewhere supporting the decision of the MIDA team to create such layers in-house.
- The 'MIDA Engine' or core software elements of the MIDA has been utilised in other national and international initiatives requiring web GIS portals - added value of the project - demonstrating technical skills within the CMRC and leading to additional project work

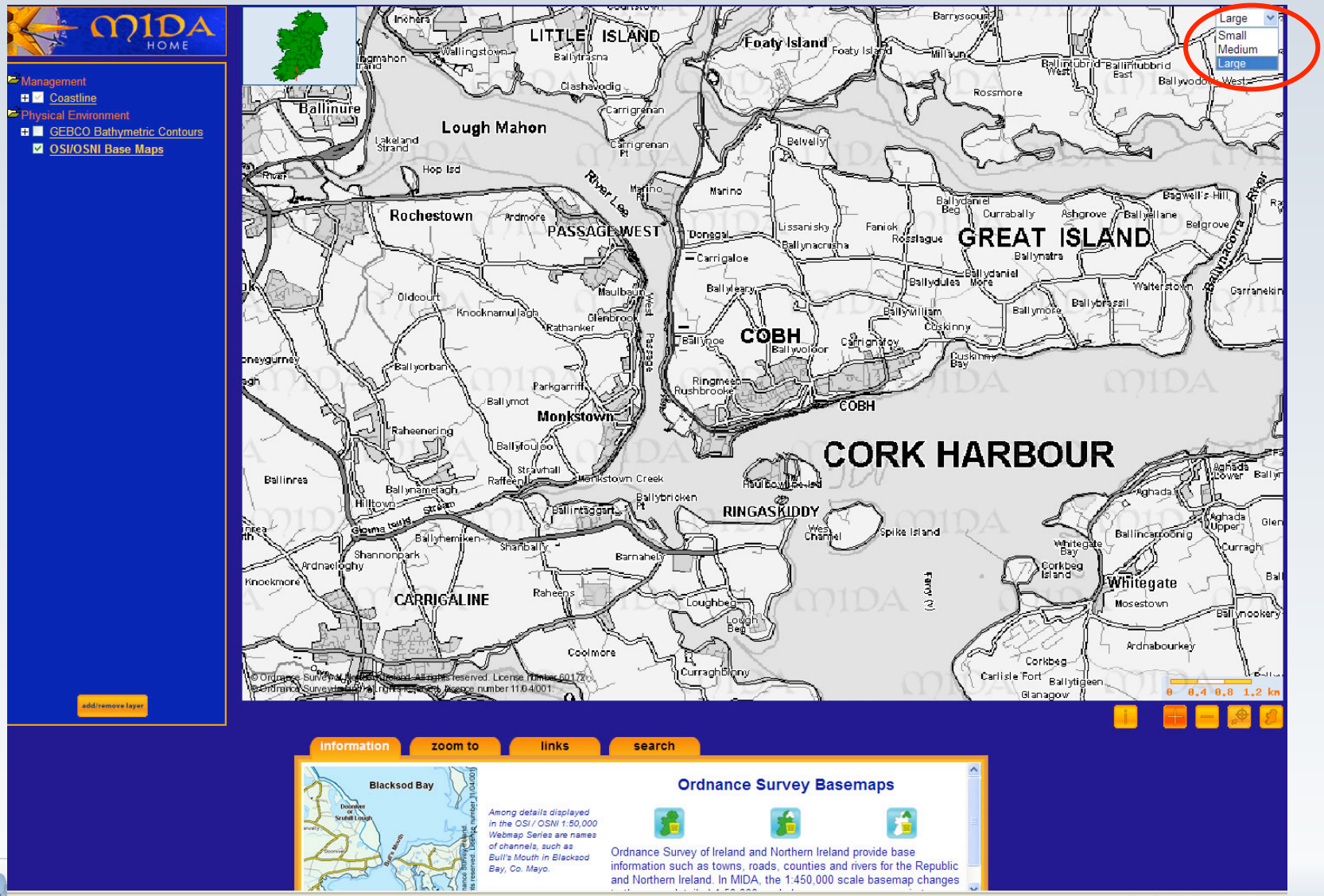
MIDA users and uses

- The MIDA is used in teaching on a number of courses organised by the department of Geography within UCC.
- Technology and web GIS aspects are presented in GIS related courses
- Students use the Atlas as a resource for their research in coastal management related courses.
- CMRC facilitates work experience for trainees through the Atlas - developing skills in web mapping and GIS and data and metadata management. To date nine trainees from five different countries have joined the MIDA team on placements that last from three to twelve months.
- Local students and secondary school transition year students on shorter term placements with the CMRC have also worked on the MIDA. Feedback given by the students indicates that MIDA is utilised as a tool by teachers in some secondary schools.

Challenges

- Funding - CMRC has assured the MIDA's future by dedicating resources to maintain the Atlas.
- Advances in the display of spatial data in environments such as Google Earth and Google Maps raise expectations of web GIS users concerning the look and feel of such applications.
- MIDA team now needs to address not only maintenance but also tasks to develop a new technology interface as well as a data management system.
- Sustained promotion and publicity is the lifeline of any Coastal Web Atlas (CWA) in order to raise awareness and attract new users. Active participation in initiatives such as ICAN provides constant exposure for the Atlas and a stimulus to undertake additional development work to advance the display as well as keeping spatial and additional information within MIDA up to date.

Challenges


MIDA
HOME
Management
Coastline
Physical Environment
GEBCO Bathymetric Contours
OSI/OSNI Base Maps
add/remove layer
LITTLE ISLAND
Foaty Island
Lough Mahon
Ballinure
Rochestown
PASSAGE WEST
GREAT ISLAND
COBH
CORK HARBOUR
Monkstown
RINGASKIDDY
CARRIGALINE
Whitegate
Large
Small
Medium
Large
information
zoom to
links
search
Blacksod Bay
Among details displayed in the OSI / OSNI 1:50,000 Webmap Series are names of channels, such as Bull's Mouth in Blacksod Bay, Co. Mayo.
Ordnance Survey Basemaps
Ordnance Survey of Ireland and Northern Ireland provide base information such as towns, roads, counties and rivers for the Republic and Northern Ireland. In MIDA, the 1:450,000 scale basemap changes

LIMES – Land and Sea Monitoring for Environment and Security

LIMES

LIMES - European Commission Funded
~25M€, 50 pan-European partners, Period: Dec 2006 – June 2010

Exploitation of any new/ emerging technologies (new civil satellites, Sat-AIS, GPS tracking…..)

Addressing European Maritime Security

SIXTH FRAMEWORK PROGRAMME

Aeronautics & Space • Space 2005
FP6-2005-Space-1 / GMES Security

LIMES user group and project idea

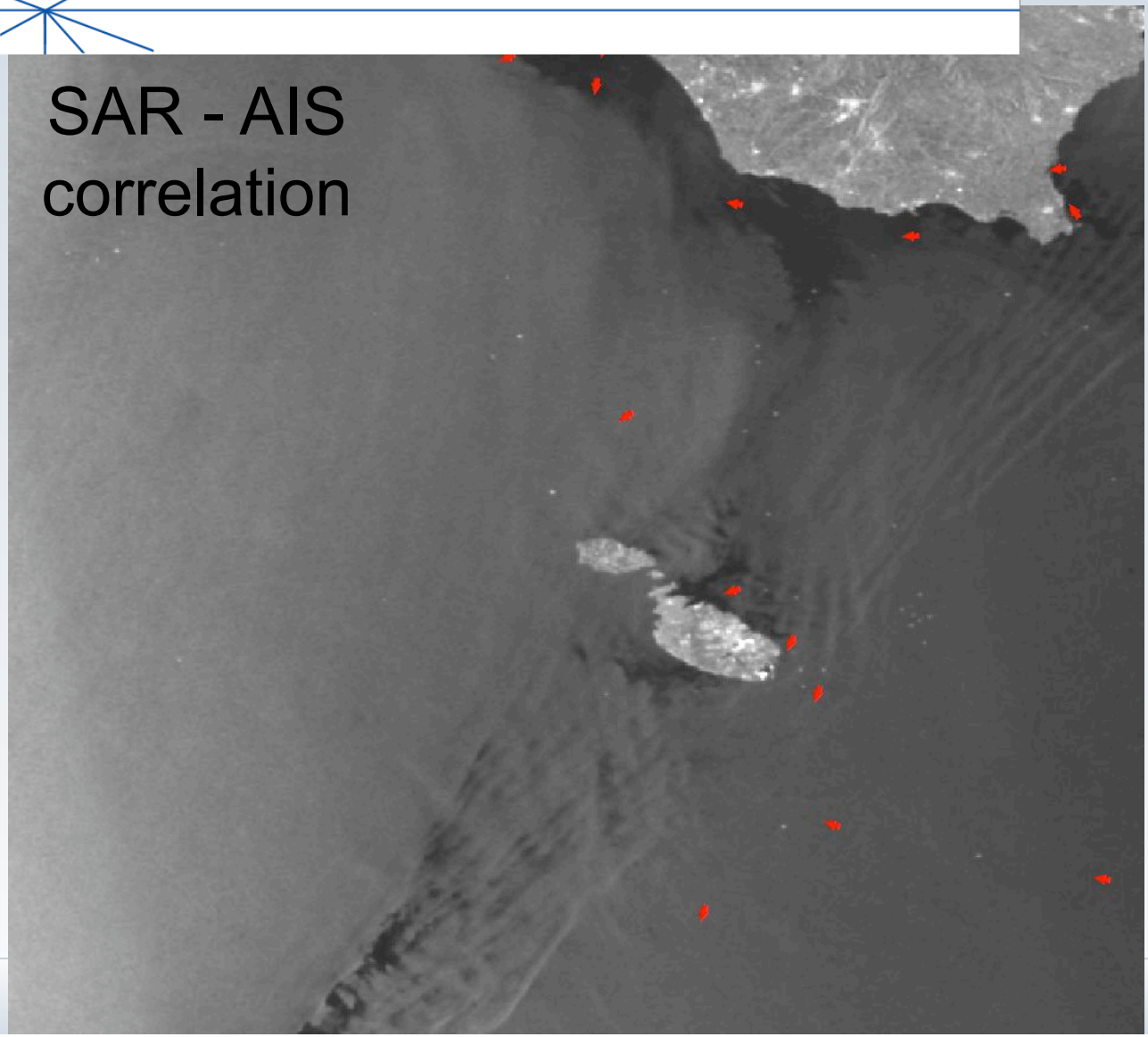
LiMES

- End user group is very specialised including the Navy, Customs, Coastguard
- They are operational users, who need information at a certain time and certain reliability
- the current interface is a prototype that should make the user groups work easier
- current work is conducted with AIS - Automatic ID System (yachts - certain length and commercial boats) and VMS – Vessel Monitoring System (fishing vessels) both based on GPS
- Project tries to address information gabs for vessels that have their systems switched off using satellite data to identify suspect vessels e.g. drug trafficking or fishing in protected areas

LIMES idea

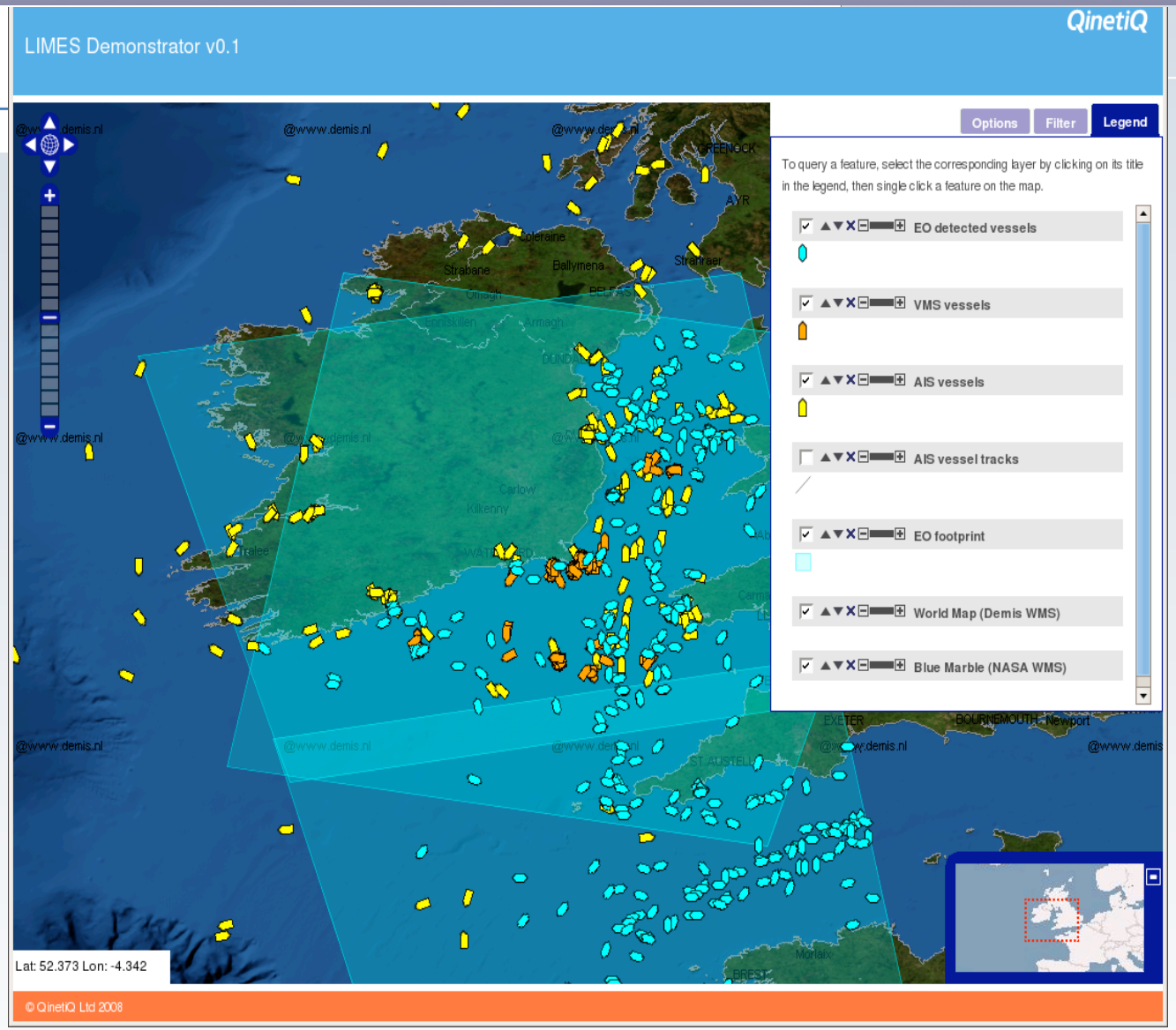
LIMES

SAR - AIS correlation



1. SAR Ships
2. SAR + AIS
3. Correlation SAR - AIS
4. Uncorrelated ships

LIMES user group and demonstration interface idea

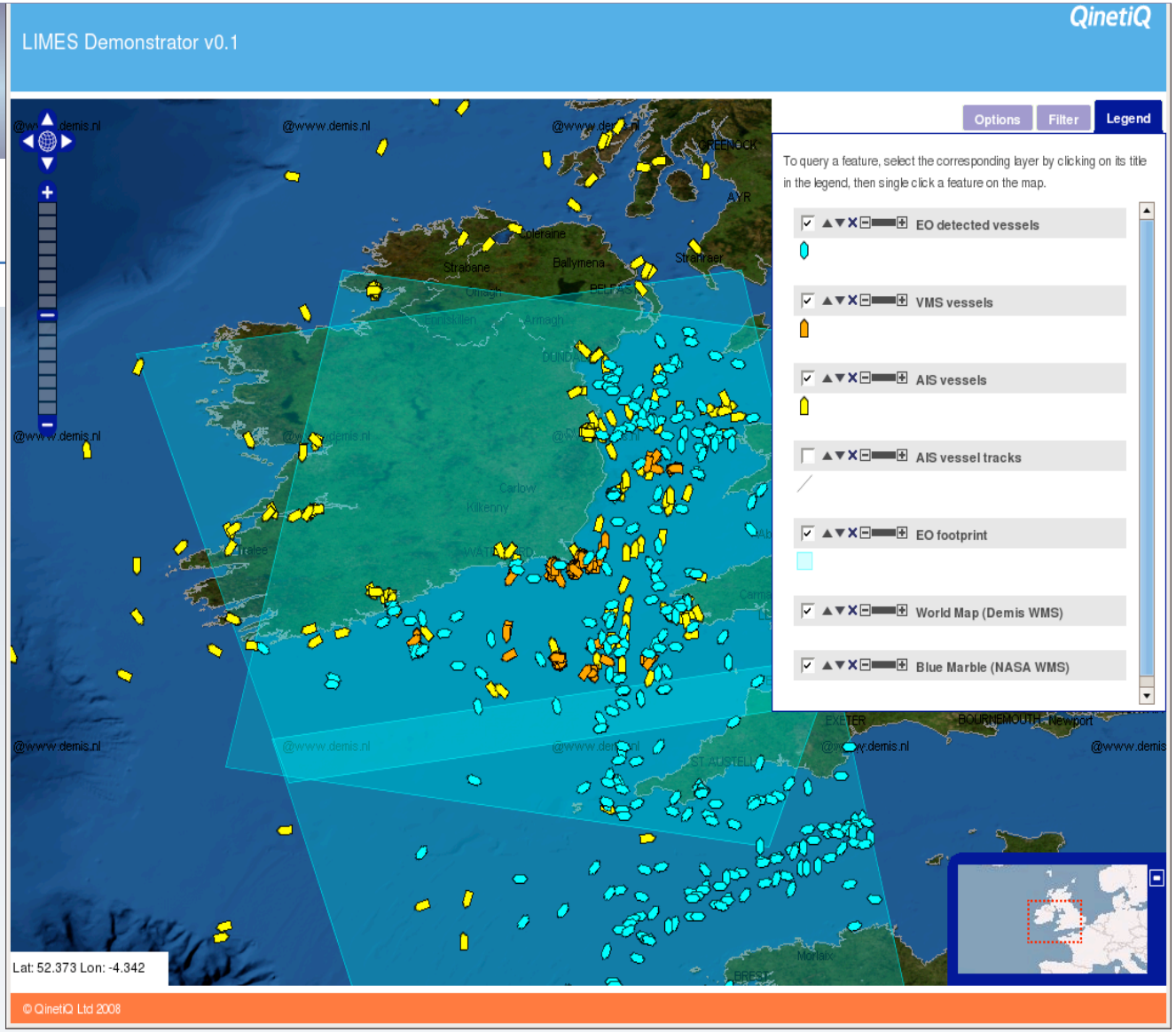


Challenges

- Overload of information not necessarily easy to use and operate with
- Integration of data: Time lag satellite data, AIS and VMS data
- Need information in near real time – Satellite data delayed
- Poor design of Interface
- Data integration into existing Interface opportunity and challenge

- LIMES partners would like to hear any feedback how to address any of these challenges from ICAN experts

LiMES


LIMES Demonstrator v0.1
QinetiQ
Options
Filter
Legend
To query a feature, select the corresponding layer by clicking on its title in the legend, then single click a feature on the map.
EO detected vessels
VMS vessels
AIS vessels
AIS vessel tracks
EO footprint
World Map (Demis WMS)
Blue Marble (NASA WMS)
@www.demis.nl
Lat: 52.373 Lon: -4.342
© QinetiQ Ltd 2008