

Web-GIS usage and users– Case studies from Ireland



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 - Introduction
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 - LIMES idea
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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/>)



The screenshot shows the MIDA website interface. At the top, there is a navigation bar with 'edit', 'View', 'Favorites', 'Tools', and 'Help'. Below this is a search bar and a toolbar with icons for search, favorites, media, and other functions. The main content area features a large map of Ireland with various layers overlaid, including bathymetric contours and coastline data. A 'Layers' panel on the left lists several categories: Biological Environment (with 'Periwinkle Distribution' checked), Management (with 'Coastline of Ireland (GSHHS)' and 'Ramsar Sites' checked), and Coastal Lagoon (with 'GEBCO Bathymetric Contours' checked). A 'Tools' panel is visible on the right. Below the map, there are buttons for 'information', 'zoom to', 'links', and 'search'. The 'information' button is highlighted, showing a detailed view of a Ramsar Site: 'The Gearagh in Co. Cork represents the only extensive alluvial woodland in Ireland and is important for a wintering bird population.' Below this, there is a section for 'Ramsar Sites' with the text 'Over 1...' and 'the International Ramsar Convention on Wetlands and Waterfowl Habitats, which helps to promote the wise and sustainable use of their valuable resources. >> More Information'.





Facilitation of different user groups



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

Facilitation of different user groups



MIDA HOME

- Management
 - Coastline of Ireland (GSHHS)
- Physical Environment
 - GEBCO Bathymetric Contours
 - OSI Base Map
 - Coastal Lagoons
 - Salt Marshes

add/remove layer

0 45 90 135 km

information zoom to links search

Saltmarshes

Over half the saltmarshes in Ireland are on mud flats such as this one on the North Bull island in Dublin.

Saltmarshes occur all along the Irish coast; however in some areas, for example in Wicklow and parts of Mayo, saltmarshes are few in number, thus reflecting the essentially exposed nature of the coastline in those areas. >> [More Information](#)

© Coastwatch Europe



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

The following are suggested sources for geospatial data related to the topic:

MIDA: For saltmarsh and lagoon distribution.



Information Menu

Physical Environment

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- 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

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Professional



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



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.



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.

National Parks



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](#)

Nature Reserves (Rep. Ireland)



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](#)

Nature Reserves (N. Ireland)



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- Management
 - Coastline of Ireland (GSHHS)
 - Nature Reserves**
- Physical Environment
 - GEBCO Bathymetric Contours
- OSI Base Map

add/remove layer

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information
zoom to
links
search

Nature Reserves (Rep. Ireland)

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.

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Facilitation of different user groups



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GIS Heritage Data for Ireland

LANGUAGE: [English](#) [Gaeilge](#) [Home](#) > [Parks And Wildlife](#) > [Download](#)

- Home
- News
- Parks & Wildlife
- National Monuments
- Architecture
- Placenames

National Parks and Wildlife Service - Datasets for Download

Datafiles are in compressed Zip format so as to minimize download time. To get a copy of WinZip go to www.winzip.com

Special Areas of Conservation (interactive map - county datasets)	Natural Heritage Areas (interactive map - county datasets)
Special Protection Areas (interactive map - national dataset)	Site Synopses (interactive map - county datasets)
Nature Reserves (datafile - national dataset)	National Parks (datafile - national dataset)

This Section

- Metadata
- [Download](#)
- [Click here to go back](#)





Publicity and user feedback



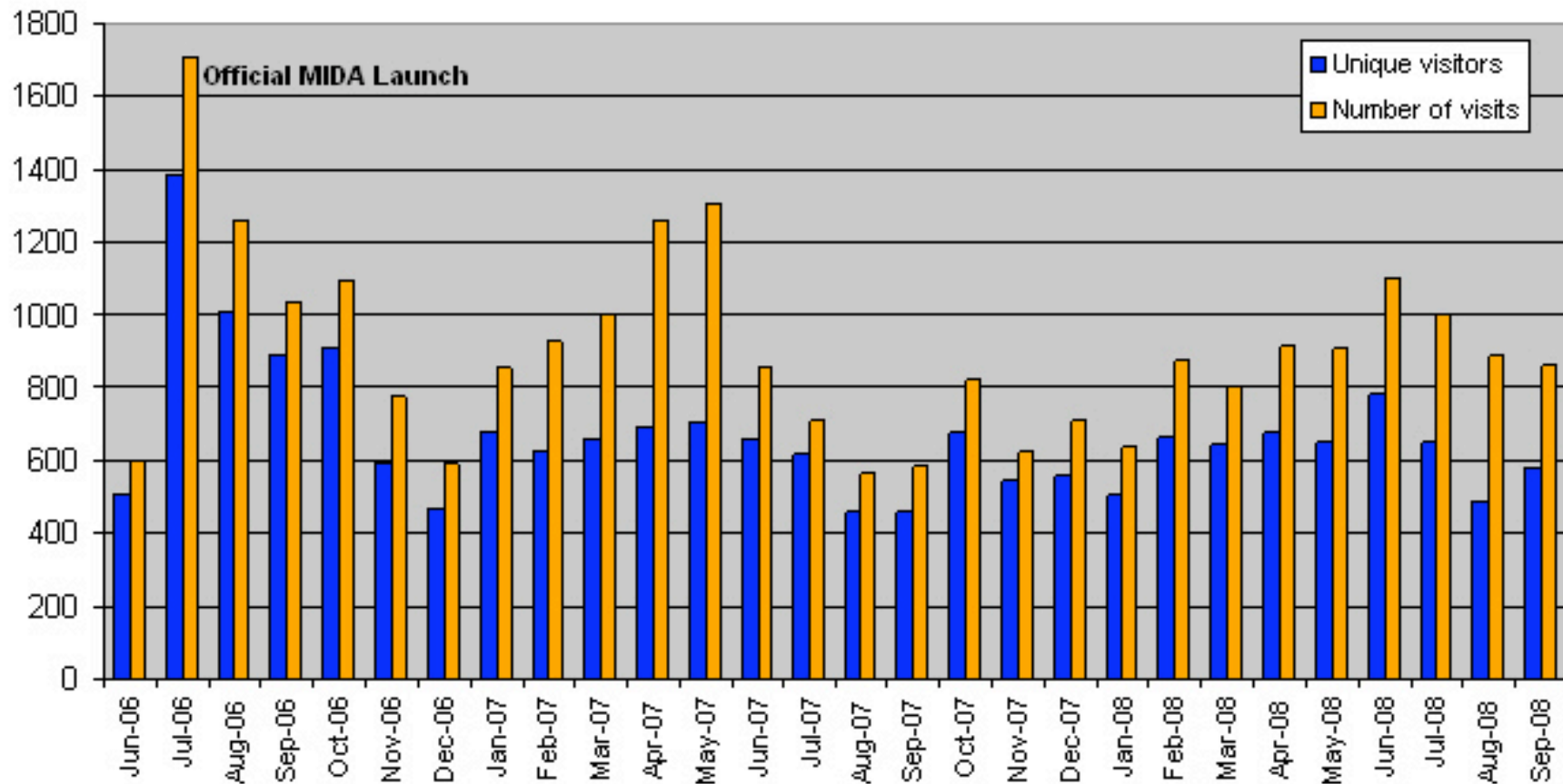
- Workshops: consultation of cross-section of end-users throughout the MIDA design and development phase
- Because the potential end-user input can ensure that the Atlas would meet user needs e.g., participants expressed interest in spatial data for specific additional themes; to date; over 85% of those 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 statistics





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



Management

- Coastline

Physical Environment

- GEBCO Bathymetric Contours
- OS/OSNI Base Maps

add/remove layer

Information **zoom to** **links** **search**

Blackod Bay

Among details displayed in the OS/OSNI 1:50,000 Webmap Series are names of channels, such as Bull's Mouth in Blackod 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

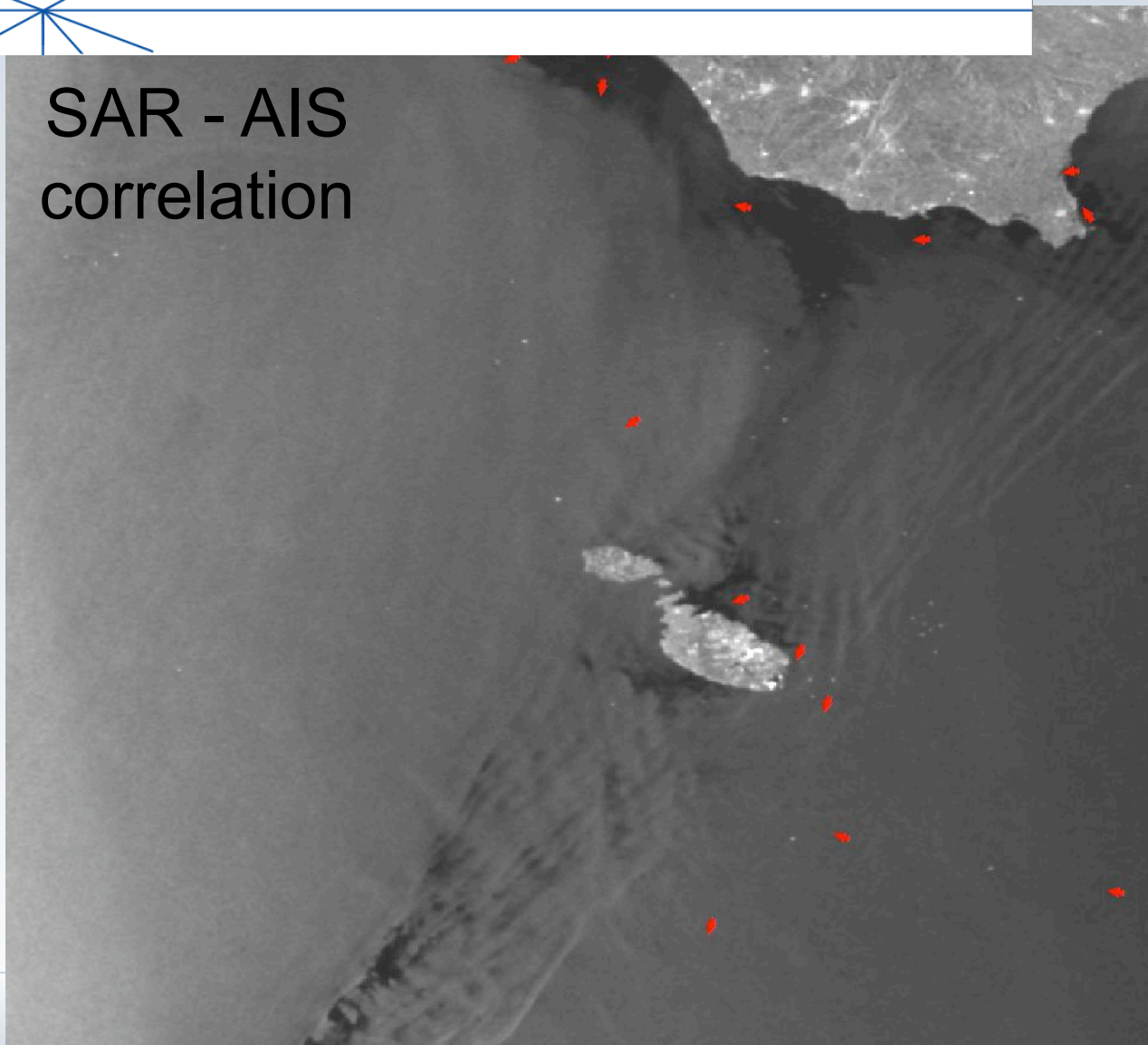
- End user group is very specialised including the Navy, Customs, Coastguard
- They are operational users, who need information at a certain time and certain reliability
- the current interface is a prototype that should make the user groups work easier
- current work is conducted with AIS - Automatic ID System (yachts - certain length and commercial boats) and VMS – Vessel Monitoring System (fishing vessels) both based on GPS
- Project tries to address information gaps 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



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)

Lat: 52.373 Lon: -4.342

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Challenges



LIMES



- 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



The screenshot displays the LIMES Demonstrator v0.1 interface. On the left, there is a navigation and zoom control panel with a compass, a zoom slider, and social media links for @www.demis.nl. The main map area shows a satellite-style view of the Atlantic Ocean, with several overlapping semi-transparent blue and cyan polygons representing detection footprints. Numerous small icons representing vessels are scattered across the map, colored in yellow, orange, and cyan. A legend panel on the right side of the map contains the following layers:

- EO detected vessels (Cyan icon)
- VMS vessels (Orange icon)
- AIS vessels (Yellow icon)
- AIS vessel tracks (Grey line icon)
- EO footprint (Cyan polygon icon)
- World Map (Demis WMS) (Satellite map icon)
- Blue Marble (NASA WMS) (Blue map icon)

Below the legend, there is an inset map of Europe with a red dashed box highlighting the current map's location. At the bottom left of the map area, the coordinates "Lat: 52.373 Lon: -4.342" are displayed. The footer of the interface includes the copyright notice "© QinetiQ Ltd 2008".