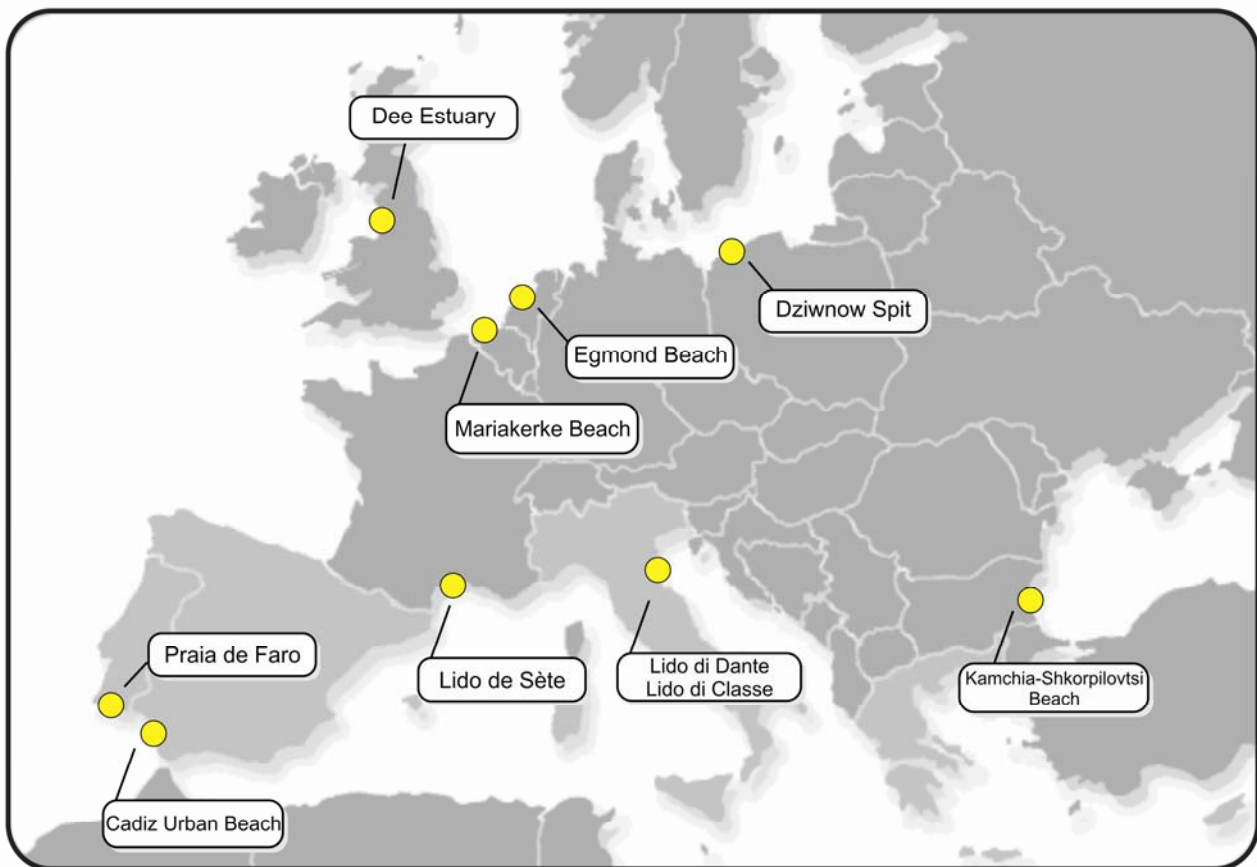
The MICORE Open Day

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MICORE – Morphological Impacts and COastal Risks induced by Extreme storm events CT – 202798 Web : http://www.micore.eu/

Instrument: FP7 – CP   **Starting date:** 01/06/2008
EC contribution: 3,499,954   **Duration:** 36 months
Organisation: Università degli Studi di Ferrara
Co-ordinator: Prof. Paolo Ciavola (cvp@unife.it)
EC officer: Dr Philippe Quevauviller (Philippe.Quevauviller@ec.europa.eu)

INTRODUCTION

Both the EU and The United Nations are now taking seriously the predicted climate change scenarios of the IPCC. Of particular relevance to Integrated Coastal Zone Management is the predicted increase in the intensity and frequency of powerful storm events characterised by larger peak wind speeds and consequently larger waves.

Engineering has usually been favoured in the past as the best option for disaster mitigation at the coast. However, most engineering works are constrained by economics, and a compromise is sought between the potential threat to lives and property and the resources available for design and construction. Furthermore, the design of structures is based on predicted extreme events which themselves are subject to uncertainty, especially in a rapidly changing global climate. The huge damage to the city of New Orleans by Hurricane Katrina illustrates clearly what can go wrong when the engineering design is subjected to forcing beyond its design limits and when civil evacuation and management plans fail.

PROJECT SUMMARY

The general aim of the project is to develop and demonstrate on-line tools for reliable predictions of the morphological impact of storm events in support of civil protection mitigation strategies. This is evidently in line with the scientific and environmental interests of TOPIC: ENV.2007.1.3.1.1. which aims to analyse and map storm related risks in sensitive European regions taking into account intensity, spatial extent, duration, hazard interaction effects. The project is specifically targeted to contribute to the development of a probabilistic mapping of the morphological impact of marine storms and to the production of early warning and information systems to support long-term disaster reduction.

A review of historical storms that had a significant morphological impact on a representative number of sensitive European sites was undertaken (WP1). The nine sites were selected according to wave exposure, tidal regime and socio-economical pressures. They included outmost regions of the European Union at the border with surrounding states (e.g. the area of the Gibraltar Strait, the Baltic and Black Sea).

All data is being compiled into a homogeneous database of occurrence (WP2) to account for storm-related socio-economic damages, including information on the characteristics of the storms,

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their morphological impacts, the damages caused on society, the Civil Protection schemes implemented after the events.

Monitoring of selected sites took place for a period of one and a half year (WP3) to collect new data sets of bathymetry and topography using state-of-the-arts technology (Lidar, ARGUS, Radar, DGPS).

Numerical models of storm-induced morphological changes are being developed (WP4), using commercial packages and developing a new open-source morphological model. The models will be linked to wave and surge forecasting models to set-up a real-time warning system (WP5) and to implement its usage within Civil Protection agencies. The most important end product will be the production of risk indicators with defined threshold for the identification of major morphological changes and flooding associated vulnerability. Finally, the results of the project will be disseminated as risk maps through an effective Web GIS system (WP6)

SCIENTIFIC PARTNERS

The Project team is very diversified, with scientists coming from disciplines like Ocean and Earth Sciences, Engineering and Meteorology. The team includes end-users as well as competent staff dedicated to the administrative day-to-day management of the project.

As it can be seen below, partners come from the education sector (Universities) as well National Research Council and public authorities. Notable is the presence of two large consultancy groups with specific competence in linking research outcomes with ICZM strategic decisions.
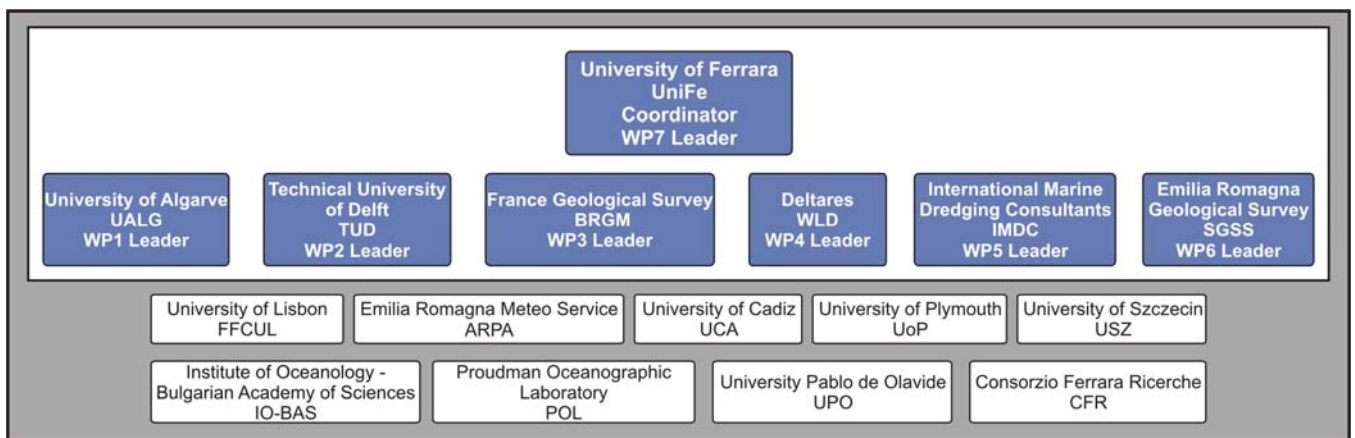
THE TEAM

1	Prof. Paolo Ciavola	Dipartimento di Scienze della Terra Università degli Studi di Ferrara	ITALY
2	Dott. Marco Deserti	Hydro-Meteorological and Climatological Service of the Emilia Romagna Region, Italy (ARPA-SIM)	ITALY
3	Dott.ssa Luisa Perini	Geological Survey of the Emilia-Romagna Region	ITALY
4	Prof. Oscar Ferreira	University of Algarve CIACOMAR-CIMA	PORTUGAL
5	Prof. Rui Taborda	University of Lisbon - Fundação da Faculdade de Ciências da Universidade de Lisboa	PORTUGAL
6	Dr. Javier Benavente	University of Cadiz Department of Earth Sciences	SPAIN
7	Dr. Balouin Yann	BRGM-French Geological Survey - Regional Geological Survey of Languedoc-Roussillon Montpellier	FRANCE
8	Dr. Piet Haerens	International Marine Dredging Consultants	BELGIUM
9	Prof. Jon Williams	University of Plymouth School of Geography	UK
10	Prof. Kaziemierz Furmanczyk	University of Szczecin INoM Laboratory of Remote Sensing and Marine Cartography	POLAND
11	Dr Nikolay Valchev	Institute of Oceanology, Bulgarian Academy of Sciences	BULGARIA
12	Dr. Albertus (Ap) Van Dongeren	Stichting Deltares	THE NETHERLANDS
13	Dr. Mark Van Koningsveld	Technical University of Delft Civil Engineering	THE NETHERLANDS
14	Dr. Alejandro Jose Souza	Natural Environment Research Council Proudman Oceanographic Laboratory	UK
15	Dr. Pedro Ribera	University Pablo de Olavide Department of Physical, Chemical and Natural Systems	SPAIN
16	Mrs. Stefania Corsi	Consorzio Ferrara Ricerche	ITALY

The MICORE Open Day Schedule

Contents	Who speaks?	Code
• 9:00 - Welcome to the meeting • 9:10-9:20 - Enhanced science-policy links in the area of extreme climatic events **9:20– 9:40: Introduction to the MICORE Project:** ○ Brief overview of the project and interaction between the work packages	**Ph. Quevauviller Project Officer** **P. Ciavola Project Coordinator**	**EU**

9:40 – 10:00: Marine storm database
   ○ Content:
       ▪ Difficulty to have access to marine data
       ▪ Why it is important to have datasets
       ▪ Variability in dataset and thresholds = argument for local morphological model
       ▪ Advise to continue with the dataset and expand it
       ▪ The minimum aim: permanent update of the dataset
       ▪ Ideal aim = add missing places in Europe
       ▪ The need to secure funding to improve the database after MICORE
	**Ó. Ferreira
	WP1 Leader**
		UALG

10:00 – 10:20: Philosophy of the open access data policy
   ○ Content:
       ▪ Initiatives of common standards exists (e.g. Inspire standard), but no common data-sharing method existed
       ▪ Intention should be that the open database should survive after the project
       ▪ Show the power of sharing data in an open environment
       ▪ Advice to the EU to require open access databases for future EU projects
	**M. Van Koningsveld
	WP2 Leader**
		TUD

10:00– 10:40: Open source storm impact community model
   ○ Content:
       ▪ First funding came from the US
       ▪ Strong argument to use/require the use of open source models => model is independent from funding and continuous after the project
       ▪ Open source models benefit from co-development from all users
	**A.Van Dongeren (tbc)
	WP4 Leader**
		WLD

▪ Calibration is necessary to do in as much as possible cases => link to benchmarking database and importance of open database		
10:00 – 11:10: Coffee Break		

11:00 – 11:30: Data collection to improve modeling
  o Content:
    ▪ Model calibration is done based on real site data
    ▪ Due to in-situ specific issues new elements in the XBeach code were developed, e.g. hard structures like for Belgian case and the Italian case
    ▪ We did measurements and these had effect on the modeling development
	Y. Balouin
	WP3 Leader
		BRGM

11:30 – 11:50: Early Warning System philosophy
  o Content:
    ▪ EWS in view of the Frame of Reference
    ▪ Show SII and evolution for all partners
    ▪ What are the aims of the FoR and the thinking behind it
    ▪ The usefulness for other projects
    ▪ The EWS generic concept
	P. Haerens
	WP5 Leader
		IMDC

11:50 – 12:10: Communicating Early Warnings to end-users
  o Content:
    ▪ Three test cases: Italy, Belgium and Netherlands
    ▪ Show how the communication will be organized for an easy comprehension
	L. Perini
	WP6 Leader
		SGSS

12:10 – 12:30: Questions and feedback		
12:00 – 13:30: Buffet lunch		

13:30 – 13:50: What does the EU expects from MICORE?
  o Links with other natural risk projects (e.g. MOVE, ENSURE, CONHAZ)
  o Emphasize the integration in existing warning systems in EU and beyond:
    ▪ (www.meteoalarm.eu) – alerting Europe for extreme weather
    ▪ Floods Portal (http://floods.jrc.ec.europa.eu)
    ▪ GDACS Global Disaster Alert and Coordination System (www.gdacs.org)
  o Other EU initiatives interested in MICORE? E.G. Council of Europe EUR-OPA
	P. Ciavola
	Project Leader
		UNIFE

13:50-14:10 EU natural disaster policy
14:10-14:45 Coffee break
14:45 – 15:45: Open talk/feedback/discussion
15:45 – 16:00: Conclusions
    o   Chairman: Paolo Ciavola
    o   Summarize the main conclusions and emphasize the actions for the months left.
    o   Spin-off activities after MICORE
	Thomas de Lannoy (Tbc)	**EU DG ECHO**

--- Project 202798 --- OPEN DAY 30/11/2010

Dissemination level PU (public)   7