NEREIDs: Embracing Innovation for Preparedness in Civil Protection & Marine Pollution

A proposal submitted to

2012 Call for proposals for Preparedness and Prevention projects in civil protection and marine pollution

Annex II

Extended Technical Proposal

Wednesday May31, 2012

Table of Contents

Cyprus Marine Environment Protection Association 87

Executive Summary

The "Deepwater Horizon" oil spill in the Gulf of Mexico highlights the value of cross-border civil protection and marine pollution preparedness, cooperation, and training, given the current oil and gas drilling activities in SA Mediterranean and the devastating economic and ecological effects of a technological disaster in coasts of such unique natural beauty. The NEREIDs proposal aims to strengthen civil protection and marine pollution preparedness and cooperation among Greece and Cyprus, building on international standards, best practices, and innovative Information and Communication Technologies (ICT). An eLearning platform building on innovative concepts of online games, mobile technologies & apps will train professionals and volunteers in plans and best practices supported by R&D in Greece, UK, and Germany. Risk assessment techniques supported by cooperation of marine research centres in Greece, Cyprus and the UK, and an incident database including descriptions of incidents in a standard format will provide the basis for Skills development on cross-border cooperation and synergies, the Host Nation Support (HNS) guidelines, and collaboration among professionals and Red Cross and Johanniter-Unfall-Hilfe volunteers. Two table-top exercises, multiple information days, and a final conference organized by civil protection & marine pollution authorities, will provide engagement opportunities for members of the European Civil Protection Mechanism (ECPM). Three evaluation workshops will support co-operative design of training material for skills development and knowledge retention.

Objectives:

(a) advance cross-border civil protection and marine pollution cooperation for direct response to natural, technological and man-made disasters which require specific technical skills or know-how.

(b) contribute to the education and skills development of professionals and volunteers aiming to increase the preparedness of participating states for the coastal consequences of marine pollution accidents.

(c) improve preparedness for receiving assistance in line with the HNS Guidelines adopted on Dec 2, 2010.

(d) adopt novel e-learning techniques for spreading knowledge about civil protection and marine pollution in ECMP states.

(e) improve skills in combatting marine pollution encouraging adoption of best practices on standardized situational reporting.

(f) create an incident data base of best practices based on standardized situational reports highlighting outstanding response and common errors by teams involved. This database will be the basis for eLearning courses, social games, and training tools.

(g) assess an evaluation framework measuring aptitude, skills development, and knowledge retention.

Detailed Action Plan and Means

The proposal activities will concentrate on the following main lines of work:

- Advance cross-border civil protection and marine pollution cooperation for direct response to natural and man-made disasters which require specific technical skills or know-how. These actions will engage Greece and Cyprus and an international advisory board. Additionally expert groups will be assembled with participation of experts from members of the ECPM and the South East Mediterranean and internationally. Plans will be exchanged and harmonized in the course of table-top exercises, engaging HNS, risk assessment, and ICT tools.

- Cooperatively design, implement and promote continuous education and skills development aiming to increase preparedness of ECPM states for the coastal consequences of marine pollution accidents engaging professionals and volunteers (NGOs). Specific actions that will be employed include aligning plans, encouraging participation in training and preparedness courses, table top exercises, as well as best practices from Europe and worldwide.

- Increase preparedness for receiving assistance. Cyprus Civil Defence will coordinate activities targeting at raising awareness, which will be in line with the HNS guidelines adopted on Dec 2, 2010. Cooperation with the Dutch DGV will be sought through their participation in the table-top exercises and the Advisory Board.

- Engage innovative use of ICT and of e-learning for spreading knowledge about civil protection and marine pollution in member states. Expert centers in risk assessment (TEI-Crete, Oceanography Center in Cyprus, and Cardiff University) will deliver comprehensive risk assessment models based on incident reports to be used in games, eLearning and mobile (m-)Learning applications developed by FORTH(Gr) and Ubilabs (De). Civil Protection (Crete), Civil Defence (Cy), the Dpt of Fisheries & Marine Research (Cy), and National Emergency Medical Services (GR) will support the development educational material to train public officials and volunteers, enhancing their knowledge and coordination capacity. Emergency Medical Services (Crete), Red Cross, and Johanniter-Unfall-Hilfe (engaged through Ubilabs) will support training among volunteers and professionals aiming at reaching out to at least 800-1000 persons over 18 months. Techniques that will be used in this context and for further diffusion include webinars, crowd sourcing and the social web. The multilingual material created will be shared with ECPM members.

- Boost preparedness potential reducing the impact of emergencies by sharing experience and best practices on developing and making use of situational reports. NEREIDs will build on established methodologies and international standards such as those by the IMO to create a multi-modal incident database of recent pollution events and best practices in containing them. The format will incorporate risk assessment information leading to an extended standardized format for situational reports highlighting outstanding response and common errors will be developed and promoted among stakeholders.
- Create an evaluation framework using principles from the EU competence framework to evaluate the impact of eLearning methods and used on Knowledge retention in three evaluation workshops.

Expected results

- Improved planning and preparedness for EU civil protection operations, building on risk assessments and scenarios
- Improved effectiveness of the transnational cooperation provided through the Civil Protection Mechanism by improving the knowledge of professionals and volunteers
- Novel educational material available in electronic format for training and retraining of professionals and volunteers.
- Increased awareness of best practices and shared common resources to be used for training and refresh courses.

Rationale – concept

NEREIDs addresses multiple objectives of the 2012 call for proposals for projects on prevention and preparedness in the field of civil protection and marine pollution. Motivated by recent oil and gas exploration activities in the eastern meditteranean, the project pursues to cultivate cross border collaboration and preparedness building on best practices. The NEREIDs commits to the creation of resources that would be useful and sustainable beyond the lifetime of the project.

Current status:

In many locations, **Incident reports are mostly hand** written and are cannot be used to promote education and training, delivering knowledge acquired on the job. Moreover, **plans are misaligned** obstructing cross-border cooperation. Finally, there is **limited awareness of the HNS guidelines.**

The NEREIDs proposal aims to make a significant step towards alleviating roadblocks to the effective co-operation between Greece and Cyprus, setting best practices for other members of the European Civil Protection Mechanism to pursue and possibly contribute.

End Product:

NEREIDs proposes to create innovative resources for training based on the combination of past incidents and risk assessment information:

- Train in cross border collaboration between Cyprus and Greece
- Engage professionals and volunteers in online games and eLearning
- Involve national expert centers in risk assessment
- Engage national authorities in harmonizing plans, risk assessment
- Create, validate, evaluate in phases
  - ☐ Online social games,
  - ☐ eLearning courses,
  - ☐ mLearning tools, crowd sourcing
  - ☐ Harmonized plans and procedures
- Deploy a harmonised multilingual incident database to free for use to ECPM
- Promote best practices in preparedness and legislation on HNS

ADDRESSING THE objectives of the call on preparedness

Call Objectives and Additional Provisions

Call Objectives	Answer
Objective 1: *Actions aimed at cross-border civil protection and marine pollution cooperation for direct response to natural and man-made disasters, which may affect critical cross-border infrastructures between two participating countries or which require specific technical skills or know-how;*	Through concrete focused actions cross-collaboration between Greece and Cyprus will be promoted on the basis of real incidents, international best practices and ICT tools. The table-top exercises and evaluation workshops will be open to all ECPM members to achieve maximum added value. (Task D)
Objective 3: *Actions aimed at increasing the participating states preparedness for the coastal consequences of marine pollution accidents.*	Training resources will be created based on the combination of real incidents and risk assessment in the target area. Best practices and training tools will be disseminated to all members of the ECPM. (Task C/D/F)
Objective 4: *Actions aimed at increasing the Participating States' preparedness for receiving assistance.*	Significant effort will be invested in raising awareness on the guidelines on Host Nation support. There relevant multilingual material will be externally evaluated and eventually made available to the ECPM. (Task D)
Objective 5: *Actions aimed at using and developing e-learning tools for spreading knowledge about civil protection and marine pollution in Participating States.*	Different tools embracing innovative technologies will be developed validated and tested: smart phone applications, social games, applications capitalizing on crowd sourcing, eLearning courses and webinars, tabletop exercises. Since the tools will be available in German, Greek and English, they will be able to reach a significant community in Europe. The introduction of additional languages

	will be investigated through partnerships. (Task C)
Objective 6: Actions aimed at limiting the consequences of emergencies through sharing experience and best practices on developing and making use of situational reports.	A database of incidents of marine pollution will be compiled and transformed into a harmonised standard format. The contents of this database will be used as input to training resources. Following the end of the project, the incident database will sustained by CCD, and available to members of the ECPM. (Task F)
Additional Elements of innovation	**Reference**
Involvement of Volunteers	The Hellenic Red Cross Participates in the consortium as AB6, and Johanniter-Unfall-Hilfe e.V. (subcontractor to AB8) and with the task to organize the participation of volunteers to the exercise (Task C/D)
Standardization and interoperability	Current standards in regards to marine pollution reporting such as those of the IO will be investigated, validated, and promoted. Provision of feedback to SDOs (Task G)
Evaluation Framework	An evaluation framework based on best practices will be developed. This framework will support the cooperative design, development and evaluation of the NEREIDs eLearning material in three workshops overlapping development of online social games, eLearning and mLearning tools, and the incident database (Task E).
Recommendations and outlook	Based on the evaluation a specific report on recommendations will be delivered as part of the final consolidated technical report (Task A).

COST EFFECTIVENESS

The NEREIDs proposal aims to maximize the impact of EC funding. It is a very ambitious proposal in terms of the number of people it aims to reach out, presenting a good value for money. In the following sections we will address three items related to cost effectiveness, namely human resources, ecquipment, and travel.

Distribution of resources per task
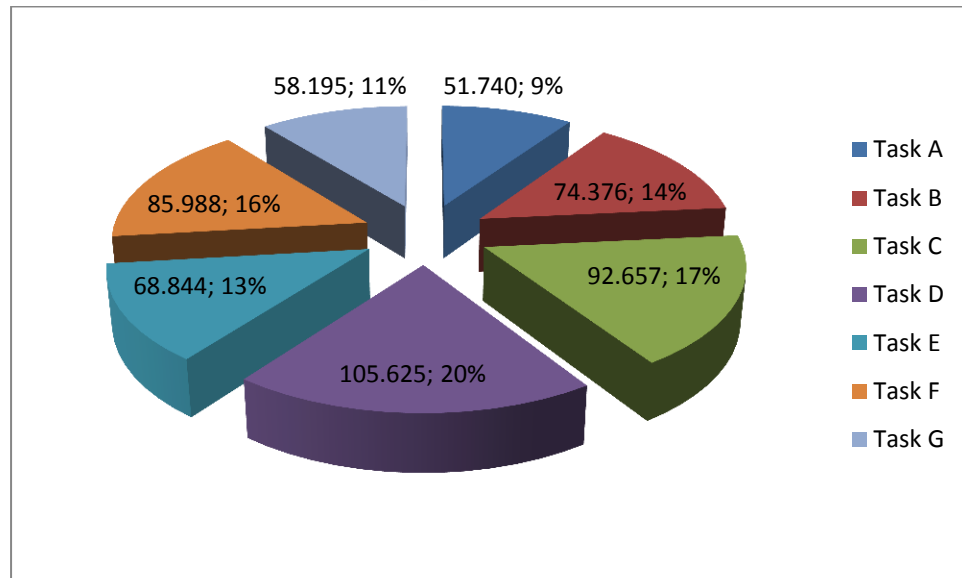
Figure 1: Distribution of effort per task.

Distribution of travel costs

The task with maximum effort is the D, the one devoted to cross border collaboration. Note also the significant investment in evaluation (Task F) which will be continuous to facilitate the principle of co-design.
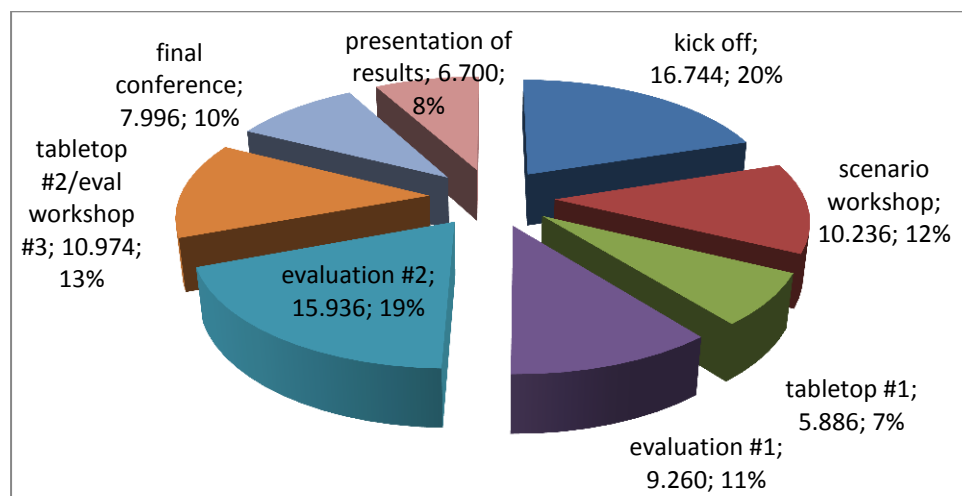
Figure 2: Distribution of costs per event organized by the project

Distribution of costs per partner

Overview
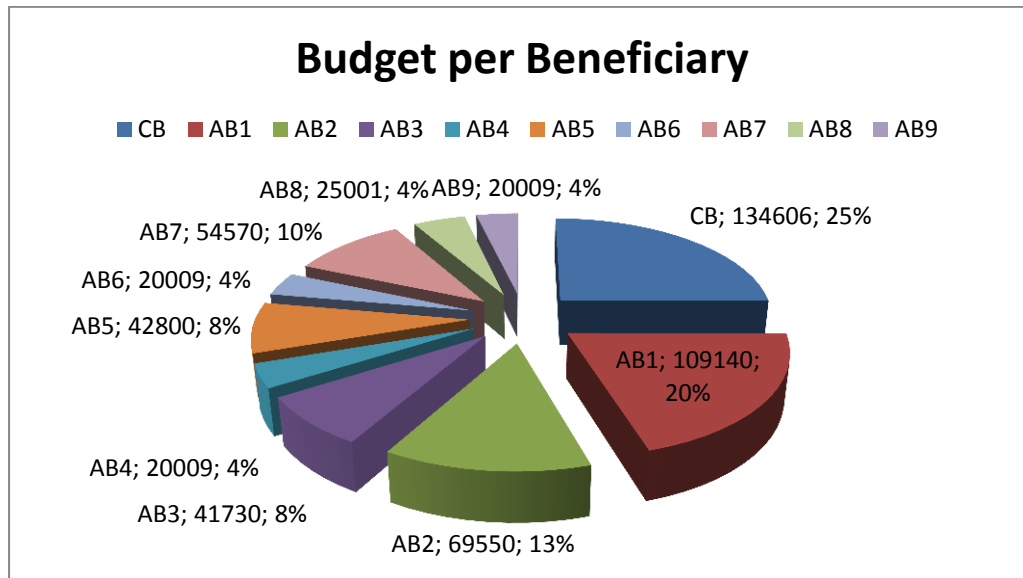
Figure 3: NEREIDs budget per beneficiary

The AB involved in the Steering Committee leading tasks are the ones investing more and ones receiving most of the funding. (see Figure 3, Figure 4)
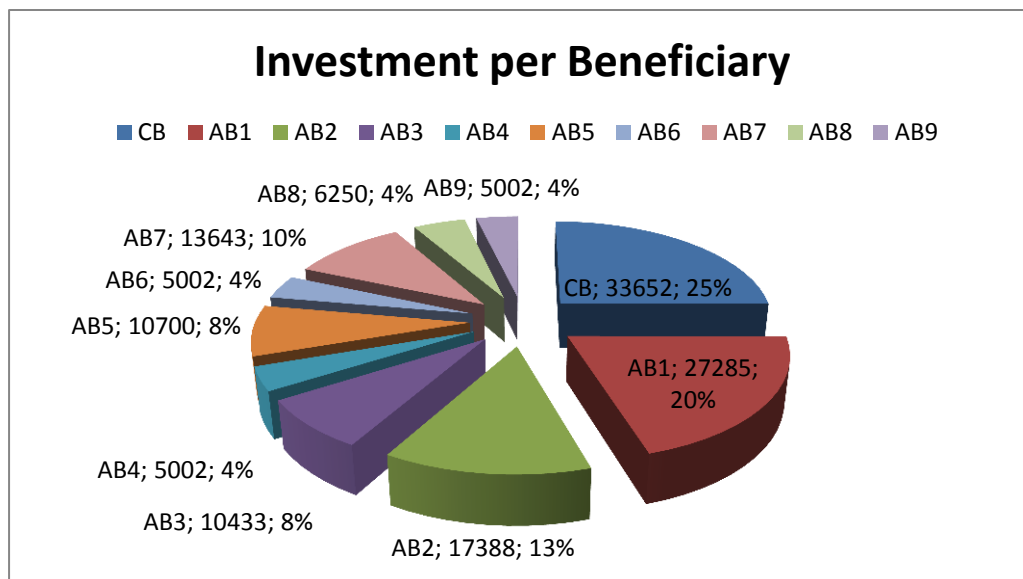
Figure 4: Investment per beneficiary.

Human Resources

Human Resources per Beneficiary

Legend: CB | AB1 | AB2 | AB3 | AB4 | AB5 | AB6 | AB7 | AB8 | AB9

- AB8; 13575; 4%
- AB9; 7968; 3%
- AB7; 37999,8; 12%
- AB6; 10413; 3%
- AB5; 30000; 10%
- CB; 96384; 30%
- AB1; 55344; 17%
- AB4; 11648,46154; 4%
- AB3; 10000; 3%
- AB2; 44916,26667;
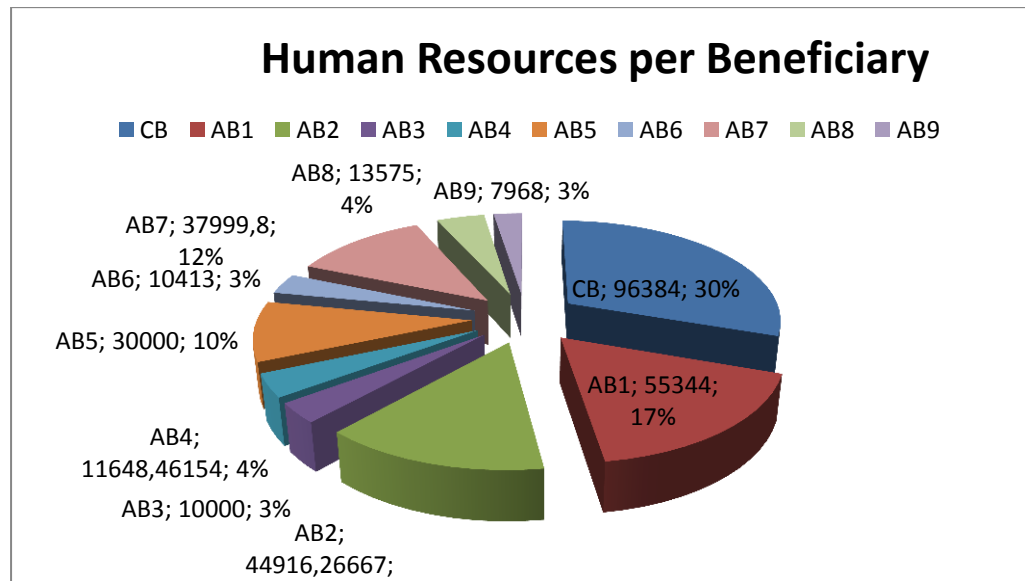
Figure 5: Human Resources per beneficiary

Ecquipment

Ecquipment costs per Beneficiary

Legend: CB | AB1 | AB3 | AB4 | AB6 | AB7 | AB9

- AB9; 5280; 19%
- CB; 3000,36; 11%
- AB7; 908,16; 3%
- AB6; 2835,36; 10%
- AB1; 8976; 33%
- AB4; 2640; 10%
- AB3; 3863,31; 14%
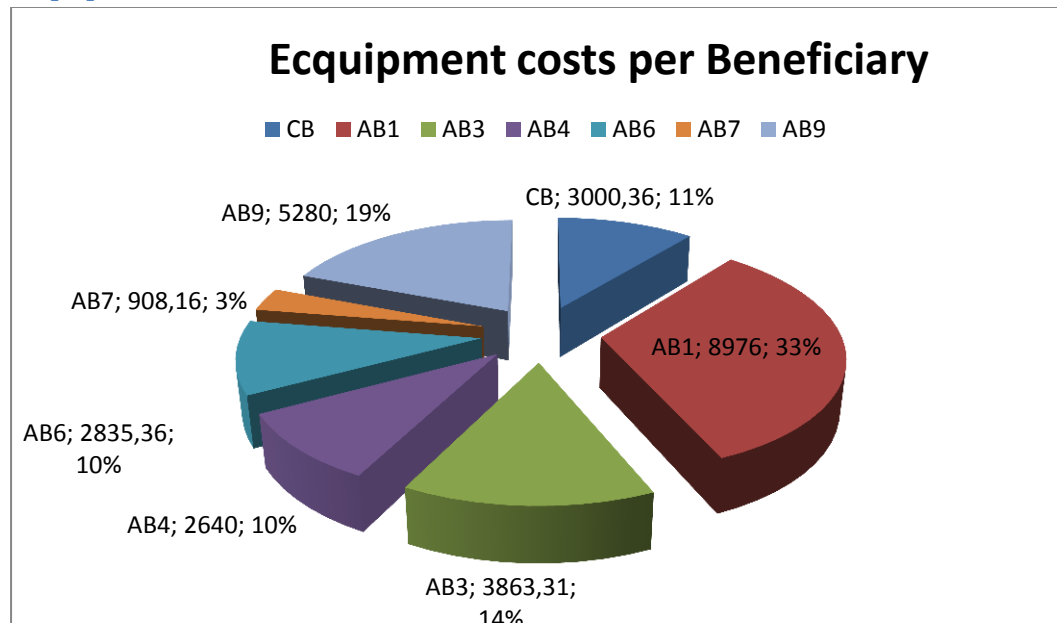
Figure 6: Ecquipment distribution per Beneficiary.

The beneficiaries have decided to invest in equipment even though the short duration of the project provides only for partial depreciation (66%), because this equipment was critical to the implementation of the project. The equipment comprised back office support, teaching equipment, and devices to access and evaluation training methods.

Travel

Travel costs per Beneficiary

Legend: CB, AB1, AB2, AB3, AB4, AB5, AB6, AB7, AB8, AB9

AB8; 4790; 6% AB9; 5452; 7%
AB7; 7092; 8%
AB6; 5452; 6%
AB5; 7170; 9%
AB4; 4412; 5%
AB3; 10684; 13%
AB2; 10084; 12%
CB; 14416; 17%
AB1; 14180; 17%
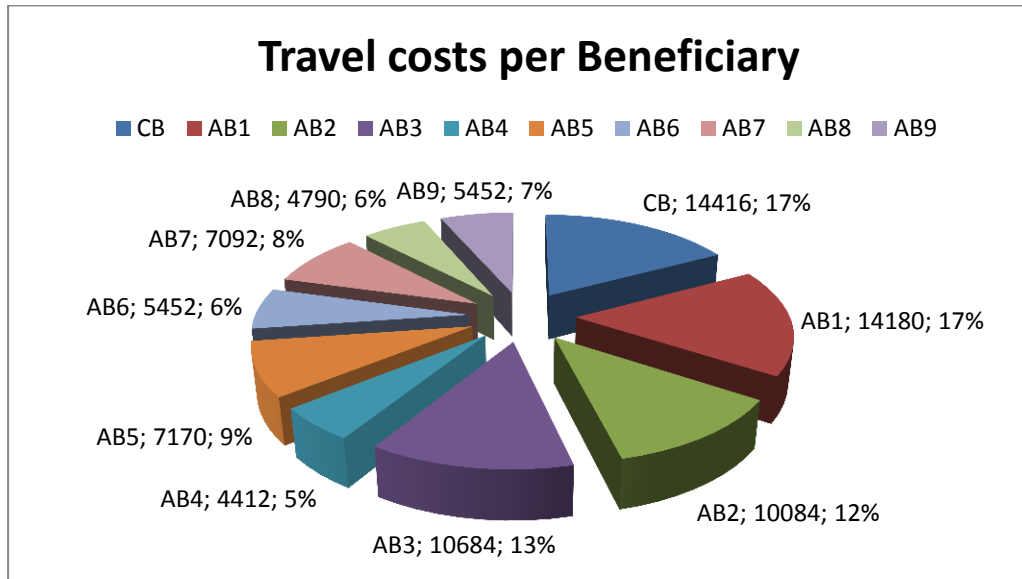
Figure 7: Travel costs per Beneficiary

Travel costs are uniformly distributed to assure participation of all participants in tabletop exercises and evaluation events.

Other costs

Other costs per Beneficiary

Legend: CB, AB1, AB3, AB5, AB7

AB5; 330; 3% AB7; 1000; 8%
AB3; 6453; 50%
CB; 3000; 23%
AB1; 2000; 16%
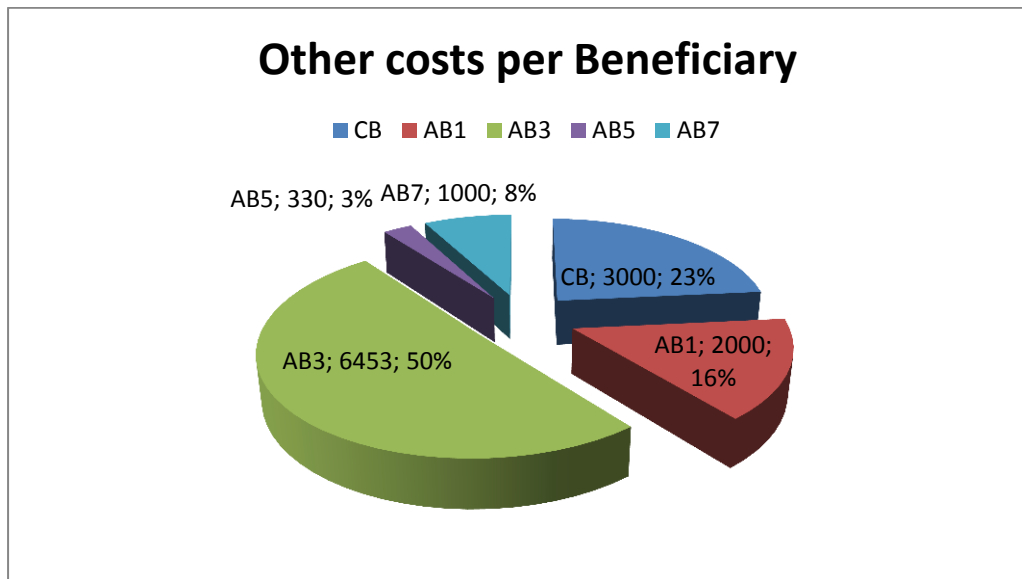
Figure 8: Budget in the Other costs category.

The limited costs (12.783) in this category are invested mainly in awareness efforts including presentation of results.

External Assistance/Sucontracting

External Support/Subcontracting per Beneficiary

■ CB ■ AB1 ■ AB2 ■ AB3 ■ AB5 ■ AB7 ■ AB8

AB7; 4000; 7%
AB8; 5000; 8%
AB5; 2500; 4%
CB; 9000; 15%
AB3; 8000; 13%
AB1; 21500; 36%
AB2; 10000; 17%
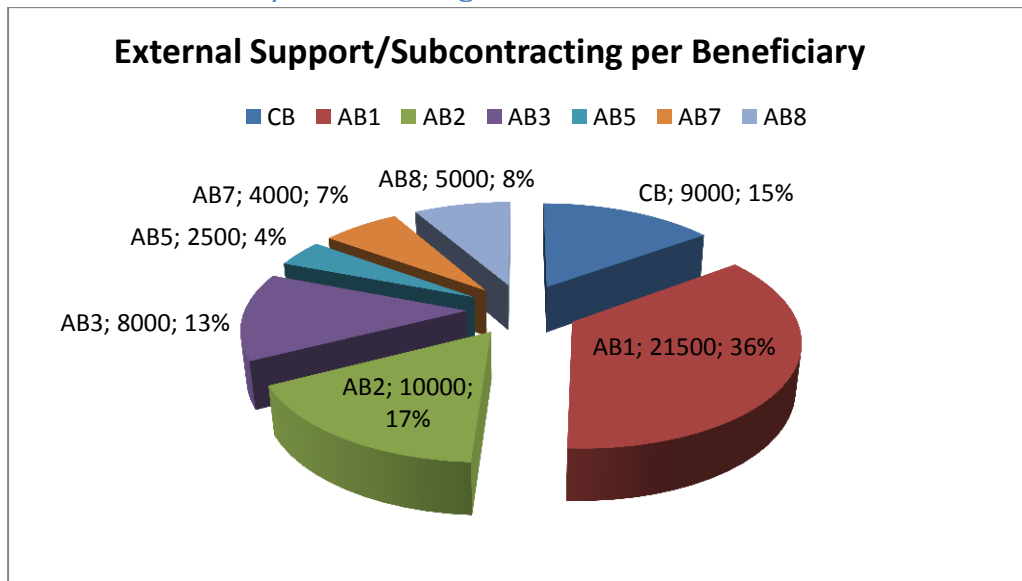
Figure 9: External support/Subcontracting by beneficiary

In this category there are two types of costs: (a) engagement of the advisory board (b) organization of workshops (c) subcontracting to experts/ potential partners that were unable to participate as beneficiaries.

EU Dimension

The partnership

The partnership brings together diverse exertise in innovative solutions and education as applied to civil and marine protection. In particular 4 different groups of partners join forces to innovate training in Civil Protection and Marine Pollution, creating multilingual resouces that can benefit volunteer organizations and civil protection forces in the members of EU civil protection mechanism and beyond:

- Expert Centers in ICT applications for Civil and Marine Protection
    - FORTH (CB)
    - Ubilabs (AB8)

- National Authorities in Civil and Marine Protection
    - Cyprus: Civil Defence, Ministry of Interior (AB1)
    - Cyprus: Direction of Fisheries and Marine Research, Minstry of Env (AB4)
    - Greece: Direction of Civil Protection, Decentralized Admin of Crete (AB3)
    - Greece: Emergency Medical Services (AB9)

- National Competence Centers in Risk Assessment for Civil and Marine Protection
    - Greece: Technological Educational Institute of Crete (AB2)
    - Greece: Helenic Center for Marine Research (subcontract to AB2)
    - Cyprus: Oceanographic Center, University of Cyprus (AB7)
    - UK: 3D Seismic Lab, Cardiff University (AB5)

- Volunteer Organizations
    - Hellenic Red Cross, Rescue and Samaritans Corps (AB6)
    - Johanniter-Unfall-Hilfe e.V. (Subcontract to AB8)

The results and outcome of the project will be shared with other members of the EU civil protection mechanism through the project portal, shared meetings and open workshops.

Letters of Support

The NEREIDs project proposal has been privileged to receive letters of support from the following organizations which will be invited to serve as experts and/or members of the International Advisory Board:

- ministry of energy in Cyprus (resp for relevant oil and gas exploration activities)
- DGV in the Netherlands (responsible for the preparation of the HNS guidelines)
- SAHANA (disaster management system)
- Hellenic institute of hydrocarbons

- Cyprus Marine Environment Protection Association

Copies of these letters are included in the relevant section of the proposal.

Figure 10: Innovation of ICT is transforming every aspect of our life. No doubt it has to be embraced by civil protection.

Innovative training methods

Innovation in ICT is reshaping every aspect of our private, civil and professional life (see Figure 10). The next generation will be "digital natives". The areas of civil protection and marine pollution can benefit from such developments, and NEREIDs aims to create knowledge resources that will pave the way towards more affordable training methods.

Civil protection workers along with volunteers will be trained using online social games, elearning courses on desktop computers and mlearning material on smart phones and tablets. The source of the material will be best practices in facing emergencies based on the discussion of past incidents in the area and elsewhere in one or more table top exercises. Particular **innovative aspects** of this work are the following:

- Collaboration among volunteer organizations and civil protection authorities. Volunteer organizations are represented in the project by the Hellenic Red Cross (AB6) and the Johanniter-Unfall-Hilfe e.V.

- Preparedness in civil protection and marine pollution that incorporates elements of risk assessment (i.e. how to integrate risk assessment into preparedness plans), innovative technologies engaging professional and volunteers (e.g. mobile technologies. Online social networks and crowd sourcing).

- Harmonization of incident reports, discussion of preparedness plans and identification of best practices among members of EU civil protection mechanism.

Trained volunteers from selected EU states

In all disasters including marine pollution, volunteers play an important role. Moreover, it is important that volunteers collaborated among themselves and with the civil protection authorities to maximize effectiveness and efficiency of available resourses.

This project is priviledged to have two outstanding volunteer organizations among its participants, namely: Hellenic Red Cross, Rescue and Samaritans Corps (AB6), Johanniter-Unfall-Hilfe e.V. (Subcontract to AB8) contributing and validating to the educational resources that will be produced in this project.

Host Nation Support

Host nation support is one of the important elements of this project as it sets out to raise the levels of awareness among the participating countries. DLR, NL has indicated interest in supporting us in this effort.

Incidence Database

The harmonized incident database that will be created in the course of this project will be an excellent resource both for the participants and the countries of the EU Civil Protection mechanism as it will facilitate the creation of realistic scenarios to be tested both online in games and courses, but also in table top exercises.

There are plans to support the database after the end of the NEREIDs project, making it available as a shared resource to the community.

WORKPLAN:METHODOLOGY & FEASIBILITY

Task lisk and Workpackage leaders

Task Code	Title	Leader	Strongly involved Participants
TASK A	T1: Task management and Reporting to the commission	Catherine Chronaki, FORTH-Institute of Computer Science (CB)	AB1, AB2, AB7
TASK B	T2: Technological Disaster Scenario Selection, Modeling, Analysis	Eleni Kokinou, TEI Crete (AB2)	AB1, AB3, AB4, AB5, AB7
TASK C	T3: eLearning tools - skills development	Vasilis Kontoyiannis, FORTH-Institute of Computer Science (CB)	AB2, AB5, AB8
TASK D	T4: Host-Nation support, Best Practices, Regional, National & International Cooperation	Panayiotis Liassides, Demetris Christou, Civil Defence Cyprus (AB1)	AB1, AB3, AB4, AB6, AB8, AB9
TASK E	T5: Evaluation of learning objectives - knowledge management / retention	George Zodiatis, Oceanography Center University of Cyprus, Cyprus (AB7)	AB1, AB3, AB4, AB6, AB8, AB9
TASK F	T6. Multinational incident report database	Mikaella Mala, Civil Defence Cyprus (AB1)	AB1, AB2, AB3, AB4, AB5, AB6, AB8, AB9
TASK G	T7. Task Publicity, Awareness, Dissemination & Liaison	Theano Apostolidi, FORTH-Institute of Computer Science	All

Deliverable list

DATE	Title	Responsible to synthesize Contributions
=	A.1.1-A.1.24d: Meeting Minutes of Steering Committee (monthly), Project Management Board (quarterly), advisory board (biannually).	CB, Task Leaders
T3	A.2d: Participant Agreements	CB, Participants: ALL
T12	A.3d: Midterm Progress Implementation Report	CB, Participants: ALL
T23	A.4d: Final Technical Implementation Report	CB, Participants: ALL
T0+3	Refine Technological Disaster Scenarios	AB2 (TEI-Crete) Participants: AB5 (CU), AB7 (OCY-CY)
T0+6	DEM maps (from bathymetry/topography data) for each study area:	AB2 (TEI-Crete) Participants: AB5 (CU), AB7 (OC-CY)
T0+6	Geomorphological maps of the study area(s)	AB2(TEI-Crete) Participants: AB5 (CU)
T0+9	Oil spill dispersion maps	AB7 (OC-UUC) Participants: AB7 (OC-UCY), AB2 (TEI-Crete)
T0+7	Disaster Scenario description:	AB2 (TEI Crete) Participants: AB5 (CU), AB7 (OC-CY)
T0+8	Proceedings of the exercise scenario workshop:	AB2 (TEI Crete) Participants: CB (FORTH), AB1 (CCD), AB2 (TEI-Crete), AB3 (CP-Crete), AB4 (DFMR), AB5 (CU), AB6 (HRC-DSRL), AB7 (OC-CY), AB8 (Ubilabs), AB9 (EMS-Crete)
T0+8, T0+15, T0+23	The ICT applications to support spreading knowledge about civil protection and marine pollution	CB, Partcipants: AB8 (Ubilabs), AB6 (HRC-DSRL), AB2 (TEI-Crete), AB7 (OC-CY)
T0+8, T0+15, T0+23	Training using "NEREID": usage manuals	CB, Participants: AB8 (Ubilabs), AB6 (HRC-DSRL),
T0+24	Evaluation of training tools from ICT perspective	CB, Participants: AB8 (Ubilabs), AB6 (HRC-DSRL),
T0+12	D1d Analysis of Civil Protection and Marine Pollution procedures in Cyprus, Greece, Germany, United	AB1 (CCD) Participants: CB (FORTH), AB3 (CP-CRETE), AB6 (HRC-DSRL), AB4 (DFMR), AB9 (EKAB), AB7 (OC-UCY)
T0+18	D2d Identification of Departments that are involved in the planning, preparedness and response phases and their training needs, in relation to Host Nation support	AB1 (CCD) Participants: CB (FORTH), AB3 (CP-CRETE), AB6 (HRC-DSRL), AB4 (DFMR), AB9 (EMS-CRETE), AB7 (OC- UCY), AB6 (CU), AB8 (Ubilabs)
T0+24	D3d Evaluation of the whole process	AB1 (CCD), AB3 (CP-CRETE) Participants: CB (FORTH), AB6 (HRC-DSRL), AB4 (DFMR), AB9 (EMS-Crete), AB7 (OC-UCY), AB5 (CU), AB8 (Ubilabs)
T0+3	Review of Evaluation Methodologies for training in Civil & Marine Protection	AB7 (OC-UCY), Participants : all
T0+6,	Evaluation Framework for training in Civil	AB7 (OC-UCY), Participants : all

T0+18, T0+23	and Marine Protection	
T0+24	Evaluation of the NEREID interventions in the context of the EU competence framework	CB (FORTH), Participants: all
T0+24	Recommendations on the adoption of eLearning and social media in civil and marine protection training	AB1 (CCD, Participants: all
T0+7, T0+12, T0+18	Report with the incidents and other statistical details from 1950 in Mediterranean Sea area, EU and worldwide	AB4 (DFMR) Participants: AB3 (CP-CRETE), CB (FORTH), AB6 (HRC-DSRL), AB1 (CCD), AB9 (EMS-Crete), AB7 (OC-UCY), AB5 (CU), AB8 (Ubilabs)
T0+24	Evaluation of the harmonized incident database	AB1 (CCD), Participants ALL
T0+1	G1d Dissemination plans:	CB (FORTH), Participation ALL
T0+1	G2d Project Web site	CB (FORTH)
T0+6, +18,+23	G3d: Proceedings of the NEREIDs workshops and final conference	CB (FORTH) in collaboration with event organizers
T0+18	G4d: Report on standardization efforts	CB (FORTH)
T0+18	G4d Report of the targeted Awareness raising activities:	CB (FORTH), participants all
T0+24	G9d: Report on intellectual property rights and exploitation	CB (FORTH), Participants all

Project Timeline

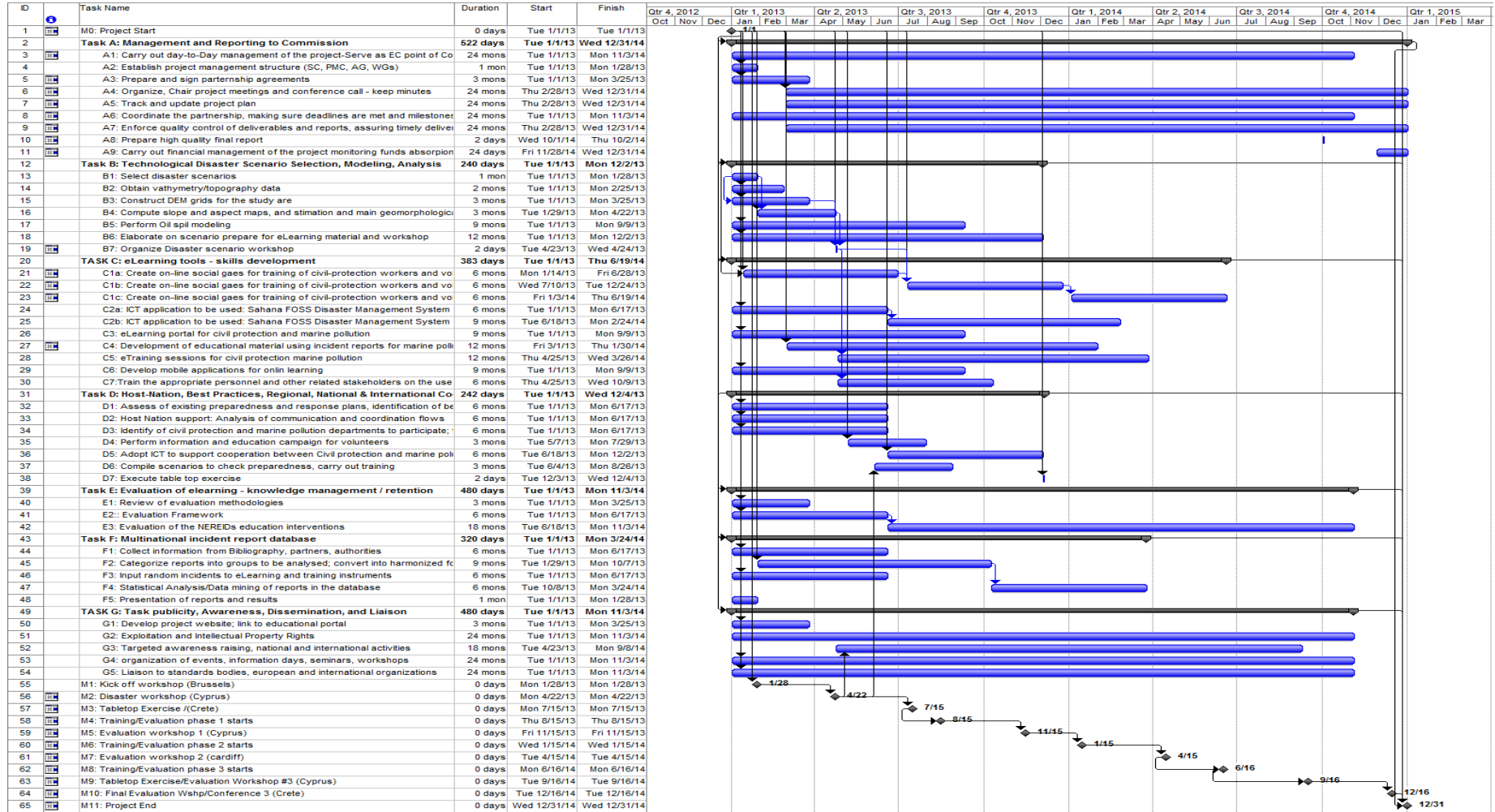| ID		Task Name	Duration	Start	Finish
1		M0: Project Start	0 days	Tue 1/1/13	Tue 1/1/13
2		**Task A: Management and Reporting to Commission**	**522 days**	**Tue 1/1/13**	**Wed 12/31/14**
3		A1: Carry out day-to-Day management of the project-Serve as EC point of Co	24 mons	Tue 1/1/13	Mon 11/3/14
4		A2: Establish project management structure (SC, PMC, AG, WGs)	1 mon	Tue 1/1/13	Mon 1/28/13
5		A3: Prepare and sign parternship agreements	3 mons	Tue 1/1/13	Mon 3/25/13
6		A4: Organize, Chair project meetings and conference call - keep minutes	24 mons	Thu 2/28/13	Wed 12/31/14
7		A5: Track and update project plan	24 mons	Thu 2/28/13	Wed 12/31/14
8		A6: Coordinate the partnership, making sure deadlines are met and milestones	24 mons	Tue 1/1/13	Mon 11/3/14
9		A7: Enforce quality control of deliverables and reports, assuring timely deliver	24 mons	Thu 2/28/13	Wed 12/31/14
10		A8: Prepare high quality final report	2 days	Wed 10/1/14	Thu 10/2/14
11		A9: Carry out financial management of the project monitoring funds absorption	24 mons	Fri 11/28/14	Wed 12/31/14
12		**Task B: Technological Disaster Scenario Selection, Modeling, Analysis**	**240 days**	**Tue 1/1/13**	**Mon 12/2/13**
13		B1: Select disaster scenarios	1 mon	Tue 1/1/13	Mon 1/28/13
14		B2: Obtain vathymetry/topography data	2 mons	Tue 1/1/13	Mon 2/25/13
15		B3: Construct DEM grids for the study are	3 mons	Tue 1/1/13	Mon 3/25/13
16		B4: Compute slope and aspect maps, and stimation and main geomorphologic	3 mons	Tue 1/29/13	Mon 4/22/13
17		B5: Perform Oil spil modeling	9 mons	Tue 1/1/13	Mon 9/9/13
18		B6: Elaborate on scenario prepare for eLearning material and workshop	12 mons	Tue 1/1/13	Mon 12/2/13
19		B7: Organize Disaster scenario workshop	2 days	Tue 4/23/13	Wed 4/24/13
20		**TASK C: eLearning tools - skills development**	**383 days**	**Tue 1/1/13**	**Thu 6/19/14**
21		C1a: Create on-line social gaes for training of civil-protection workers and vo	6 mons	Mon 1/14/13	Fri 6/28/13
22		C1b: Create on-line social gaes for training of civil-protection workers and vo	6 mons	Wed 7/10/13	Tue 12/24/13
23		C1c: Create on-line social gaes for training of civil-protection workers and vo	6 mons	Fri 1/3/14	Thu 6/19/14
24		C2a: ICT application to be used: Sahana FOSS Disaster Management System	6 mons	Tue 1/1/13	Mon 6/17/13
25		C2b: ICT application to be used: Sahana FOSS Disaster Management System	9 mons	Tue 6/18/13	Mon 2/24/14
26		C3: eLearning portal for civil protection and marine pollution	9 mons	Tue 1/1/13	Mon 9/9/13
27		C4: Development of educational material using incident reports for marine poll	12 mons	Fri 3/1/13	Thu 1/30/14
28		C5: eTraining sessions for civil protection marine pollution	12 mons	Thu 4/25/13	Wed 3/26/14
29		C6: Develop mobile applications for onlin learning	9 mons	Tue 1/1/13	Mon 9/9/13
30		C7:Train the appropriate personnel and other related stakeholders on the use	6 mons	Thu 4/25/13	Wed 10/9/13
31		**Task D: Host-Nation, Best Practices, Regional, National & International Co**	**242 days**	**Tue 1/1/13**	**Wed 12/4/13**
32		D1: Assess of existing preparedness and response plans, identification of be	6 mons	Tue 1/1/13	Mon 6/17/13
33		D2: Host Nation support: Analysis of communication and coordination flows	6 mons	Tue 1/1/13	Mon 6/17/13
34		D3: Identify of civil protection and marine pollution departments to participate;	6 mons	Tue 1/1/13	Mon 6/17/13
35		D4: Perform information and education campaign for volunteers	3 mons	Tue 5/7/13	Mon 7/29/13
36		D5: Adopt ICT to support cooperation between Civil protection and marine pol	6 mons	Tue 6/18/13	Mon 12/2/13
37		D6: Compile scenarios to check preparedness, carry out training	3 mons	Tue 6/4/13	Mon 8/26/13
38		D7: Execute table top exercise	2 days	Tue 12/3/13	Wed 12/4/13
39		**Task E: Evaluation of elearning - knowledge management / retention**	**480 days**	**Tue 1/1/13**	**Mon 11/3/14**
40		E1: Review of evaluation methodologies	3 mons	Tue 1/1/13	Mon 3/25/13
41		E2: : Evaluation Framework	6 mons	Tue 1/1/13	Mon 6/17/13
42		E3: Evaluation of the NEREIDs education interventions	18 mons	Tue 6/18/13	Mon 11/3/14
43		**Task F: Multinational incident report database**	**320 days**	**Tue 1/1/13**	**Mon 3/24/14**
44		F1: Collect information from Bibliography, partners, authorities	6 mons	Tue 1/1/13	Mon 6/17/13
45		F2: Categorize reports into groups to be analysed; convert into harmonized fo	9 mons	Tue 1/29/13	Mon 10/7/13
46		F3: Input random incidents to eLearning and training instruments	6 mons	Tue 1/1/13	Mon 6/17/13
47		F4: Statistical Analysis/Data mining of reports in the database	6 mons	Tue 10/8/13	Mon 3/24/14
48		F5: Presentation of reports and results	1 mon	Tue 1/1/13	Mon 1/28/13
49		**TASK G: Task publicity, Awareness, Dissemination, and Liaison**	**480 days**	**Tue 1/1/13**	**Mon 11/3/14**
50		G1: Develop project website; link to educational portal	3 mons	Tue 1/1/13	Mon 3/25/13
51		G2: Exploitation and Intellectual Property Rights	24 mons	Tue 1/1/13	Mon 11/3/14
52		G3: Targeted awareness raising, national and international activities	18 mons	Tue 4/23/13	Mon 9/8/14
53		G4: organization of events, information days, seminars, workshops	24 mons	Tue 1/1/13	Mon 11/3/14
54		G5: Liaison to standards bodies, european and international organizations	24 mons	Tue 1/1/13	Mon 11/3/14
55		M1: Kick off workshop (Brussels)	0 days	Mon 1/28/13	Mon 1/28/13
56		M2: Disaster workshop (Cyprus)	0 days	Mon 4/22/13	Mon 4/22/13
57		M3: Tabletop Exercise /(Crete)	0 days	Mon 7/15/13	Mon 7/15/13
58		M4: Training/Evaluation phase 1 starts	0 days	Thu 8/15/13	Thu 8/15/13
59		M5: Evaluation workshop 1 (Cyprus)	0 days	Fri 11/15/13	Fri 11/15/13
60		M6: Training/Evaluation phase 2 starts	0 days	Wed 1/15/14	Wed 1/15/14
61		M7: Evaluation workshop 2 (cardiff)	0 days	Tue 4/15/14	Tue 4/15/14
62		M8: Training/Evaluation phase 3 starts	0 days	Mon 6/16/14	Mon 6/16/14
63		M9: Tabletop Exercise/Evaluation Workshop #3 (Cyprus)	0 days	Tue 9/16/14	Tue 9/16/14
64		M10: Final Evaluation Wshp/Conference 3 (Crete)	0 days	Tue 12/16/14	Tue 12/16/14
65		M11: Project End	0 days	Wed 12/31/14	Wed 12/31/14

Figure 11: Gannt chart for the NEREIDs project
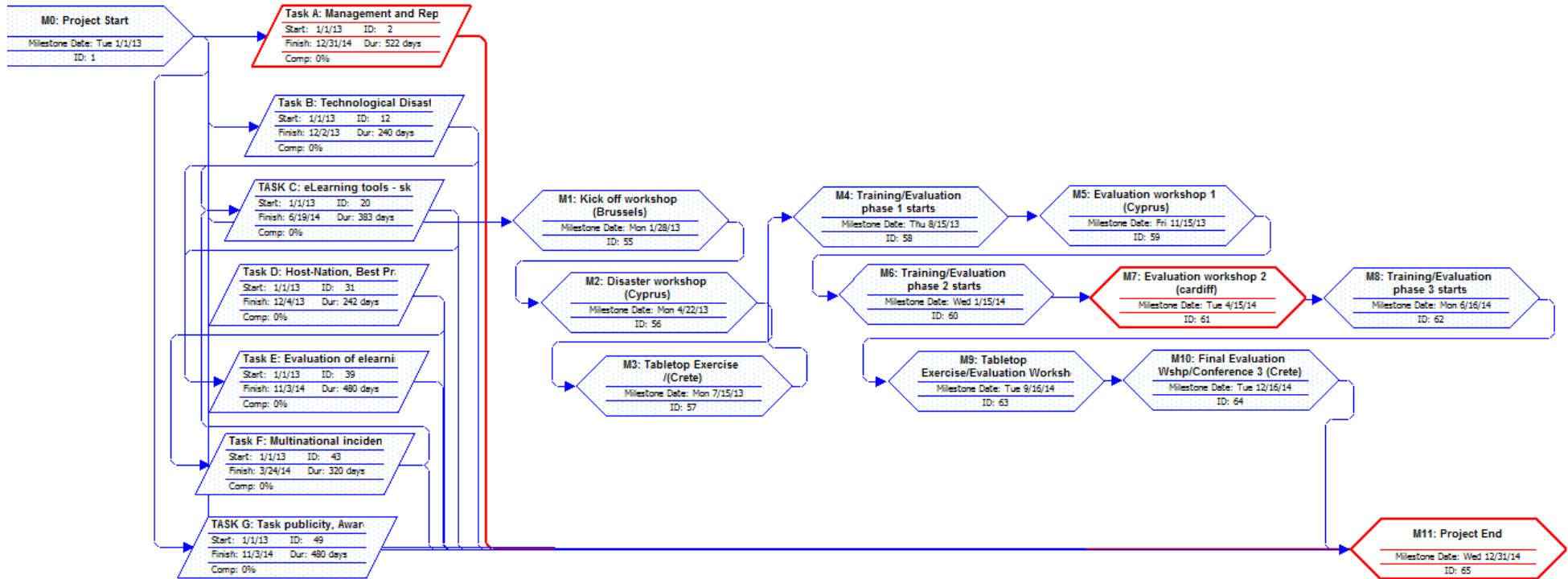
Task Dependencies

Figure 12: Task Network Diagram in the NEREIDs project

MANAGEMENT & REPORTING TO THE EUROPEAN COMMISSION

Project structure

NEREIDs will be managed following state of the art procedures and guidelines. Important to the success of the project is the fact that the beneficiaries have already worked together in prior projects and they are highly motivated to repeat its success by engaging a wider constituency.

The project management structure will consist of the project coordinator (and her assistants), the technical project manager, the task leaders, the advisory group, and Core Exercise Group. The Workgroup members representing participating organizations will be consulted on issues relevant to their organizations.

Project Coordinator

Project Coordinator responsible for day to day operation assisted by

(a) Administrative assistant

(b) Legal advisor

(c) Financial Assistant

The NEREIDs project coordinator is Mrs. C. Chronaki, FORTH-Institute of Computer Science. The Technical Project Manager of NEREIDs will be Mr Vasilis Kontroyiannis, FORTH-Institute of Computer Science.

The project coordinator will also be assisted by the Advisory Group and Steering Commitee

Core Group – Steering Committee

The Core exercise Group will comprise the Task leaders of Task A-G and will be presided by the Coordinator. The Core exercise group will meet regularly by video-conference and will have at least 3 f2f meetings a year.

Working Groups

Each WP leader will organize a working group with participation from organizations that assist to the actions of that task.

Management Board

This is the decision making body of the NEREIDs project. Each Associate beneficiary will nominate two representatives in this body. The Management Board will monitor progress of the project and will meet twice a year, with the steering committee.
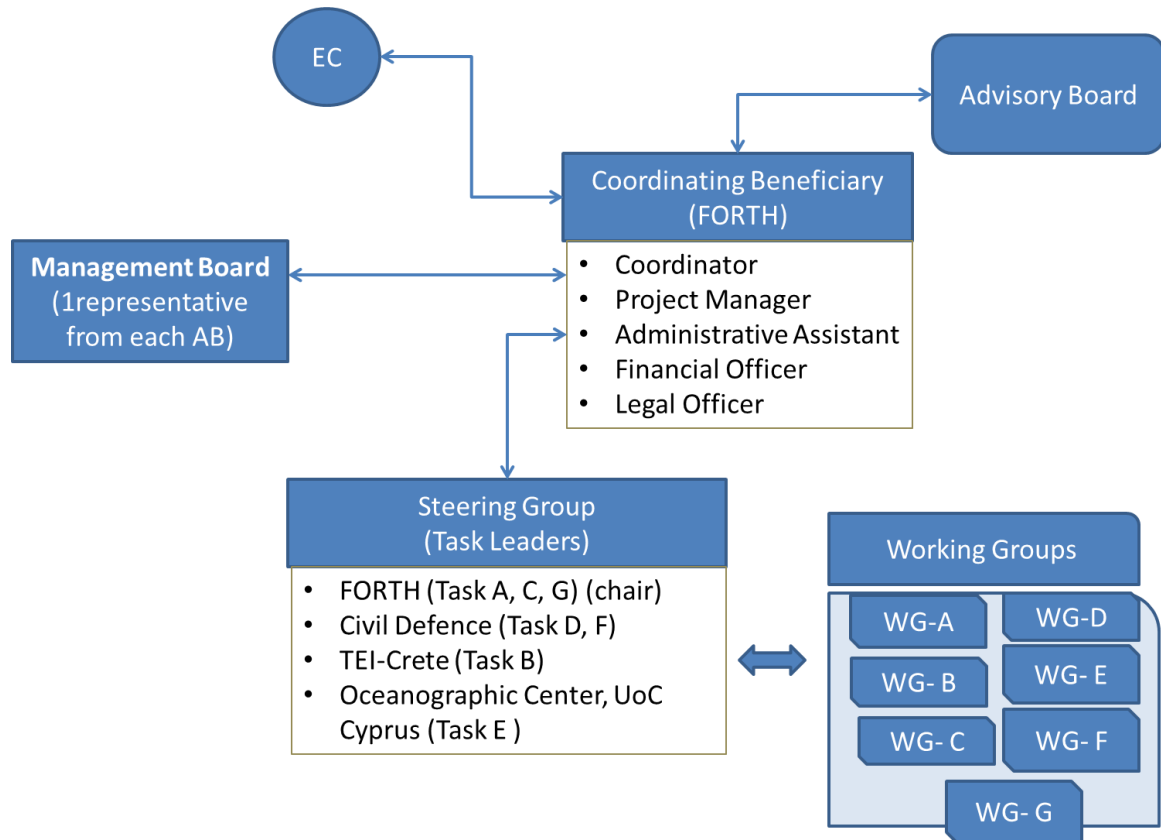
Figure 13: NEREIDs management structure

Risk Identification and Mitigation

Several risks have been identified in the project. These risks are lowered by the importance of preparedness in civil protection and the dedication of the people involved.

The following table will be maintained in the course of the project.

Risk	Level	Impact	Mitigation Strategy
Incident database underused	Low	Hi	Use isolated incidents
Failure to engage volunteers/professionals	Low	high	Interative technique used works, and provides early results.
Risk assessment data faile to sealessly integrate	Medium	Low	Seek additional expertise among partners
Failure to engage the experts, advisory bard	Low	Low	Invest additional effort

Task B: Technological Disaster Scenario Selection, Modeling, Analysis

Disaster Scenario definition based on Risk assessment study

The term **Risk Assessment** determines the impact of a hazard or hazard event on a given area. This includes advanced scientific modeling to estimate loss of life, threat to public health, structural damage, environmental damage, and economic disruption that could result from specific hazard event scenarios. Risk assessment takes place both before and during disaster events. The disaster scenario will be based on a scientific risk assessment study. This will be the first simulation exercise which will be based on a scientifically valid scenario, derived from a risk assessment study, paving the way for similar exercises with involvement of all Mediterranean countries. More details on the actual methodology are provided in the section below, and task B, in the section T of the proposal.

Select an appropriate Technological Disaster scenario

It is required that the present simulation exercise is based on a realistic disaster scenario that is sufficiently great to overwhelm the capacities of the affected country.

Technological disasters [1] are commonly defined as emergencies characterized by a sudden threat to lives, property, public health, or the environment, arising from a failure of critical infrastructure systems or the release, or potential release, of oil, radioactive materials, or hazardous chemicals into the air, land, or water. These emergencies may occur from transportation accidents, events at facilities that use or manufacture chemicals, or as a result of natural or man-made hazard events.

Oil spills (for example more than 14,000 oil spills are reported each year in the U.S.) produced from explosions on the oil and gas production platforms (Piper Alpha, 1978; Montara, 2009 and the BP Deepwater Horizon spill, 2010) or sea accidents of tankers [2], comprise a major environmental and financial threat, mobilizing thousands of specially trained emergency response personnel and challenging the best-laid contingency plans. Although many spills are contained and cleaned up by the party responsible for the spill, some spills require assistance from local and state agencies, and on occasion, the government.

In developing a hazards approach to disaster vulnerability reduction, all agencies must work together to narrow program gaps through a coordinated science and applications research agenda to pursue common solutions for common problems.

Generally six important areas are identified that require continued energy and appropriate resources to meet the challenges of future hazard risk reduction:

1. Leverage existing knowledge of the technological hazards
2. Improve hazard information data collection and prediction capability

3. Ensure the development and widespread use of improved hazard and risk assessment models and their incorporation into decision support tools and systems

4. Speed the transition from hazard research to hazard management application

5. Increase mitigation activities and incentives

6. Expand risk communication capabilities, especially public warning systems and techniques.

In the context of the present task a reliable disaster scenario will be selected. A lot of information is available in literature regarding the oil spills produced from explosions on oil and gas production platforms as well accidents of tankers [2-7]. The area(s) of the possible oil spill release is located in the marine environment between south Crete and Cyprus (Figure 14).
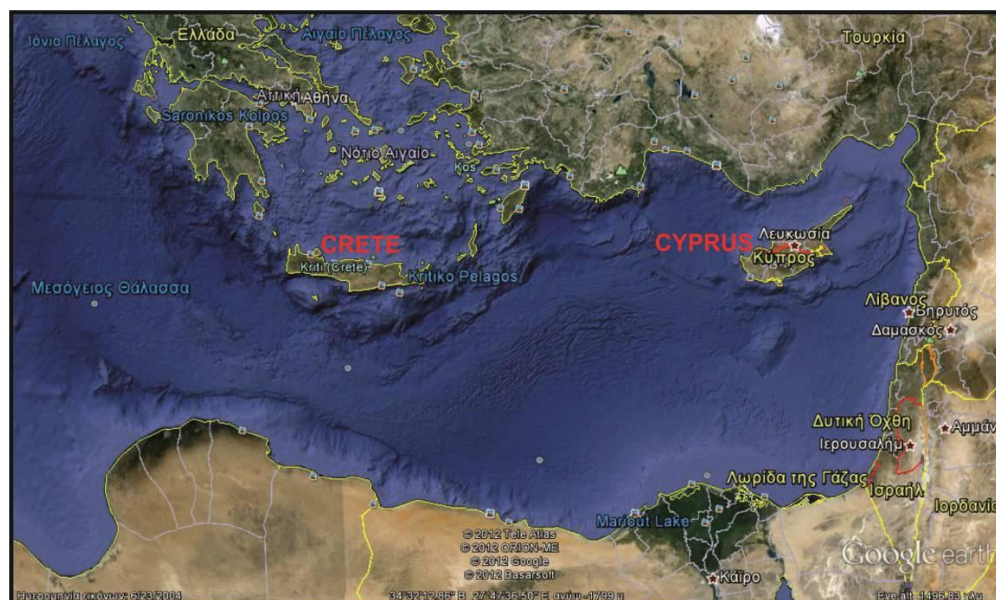
Figure 14: **Google map showing the wide area of the disaster scenario**

Mrs Chronaki (Project Coordinator) has participated in similar scenario exercises (Safe, Poseidon). Ass. Professor Eleni Kokinou, while in the Technical University of Crete and now in the Technological Educational Institute Crete has developed geomodels concerning the crust structure of Ionian sea [8-10] and further the Cretan and Libyan seas [11,12] useful for the hydrocarbon exploration and exploitation in the pre-mentioned areas. She has voluntarily involved in similar scenarios (SAFE). Dr. Alves (Cardiff University, 3D seismic Lab) is particularly involved in risk analyses of hydrocarbon systems using novel statistical methods, petrophysical, and 3-D seismic data. Finally the researchers from the Oceanographic Center of University of Cyprus and from the Institute of Oceanography-Hellenic Center for Marine Research have sufficient experience in the design and management of oil spill accidents.

Obtain bathymetry/topography data of the study area(s)

Topographic and bathymetry data and consequently the construction of the Digital Elevation Model can be retrieved in various ways with variable resolution. Topographic data of Google Earth originate from the SRTM which obtained elevation data of almost global coverage. Various authors have commented on the accuracy of the SRTM's DEM which varies from 3.6 to 16m according to the variations of the terrain. The higher resolution topography data will be sought from governmental agencies. Topography data will be also obtained from the Hellenic Army Service. Bathymetry data are also available online through ETOPO1 Global Relief Model. ETOPO1 is a 1 arc-minute global relief model of Earth's surface that integrates land topography and ocean bathymetry. Bathymetry data will be also obtained from the Hellenic Navy Hydrographic Service.

Topographic and bathymetry data will provide the basis for the next actions. An example of an elevation map from south Crete [13] superimposed by geological features is shown in Figure 15. Digitization techniques and GIS were applied for mapping representation of the data. The digital elevation model was created by the digitization of the topographic map contours (1:5000 scale maps), while the cell size of the digital elevation model was 4 m. A spatial database was created, and ArcGIS 9.3 software was used to process the collected data. This study was carried out using topographic maps of a scale of 1:5000, published by the Hellenic Army Geographical Service (H.A.G.S.). A Digital Elevation Model (DEM) was created by digitizing the contours with 5 m intervals and trigonometric points of the above mentioned topographic maps.
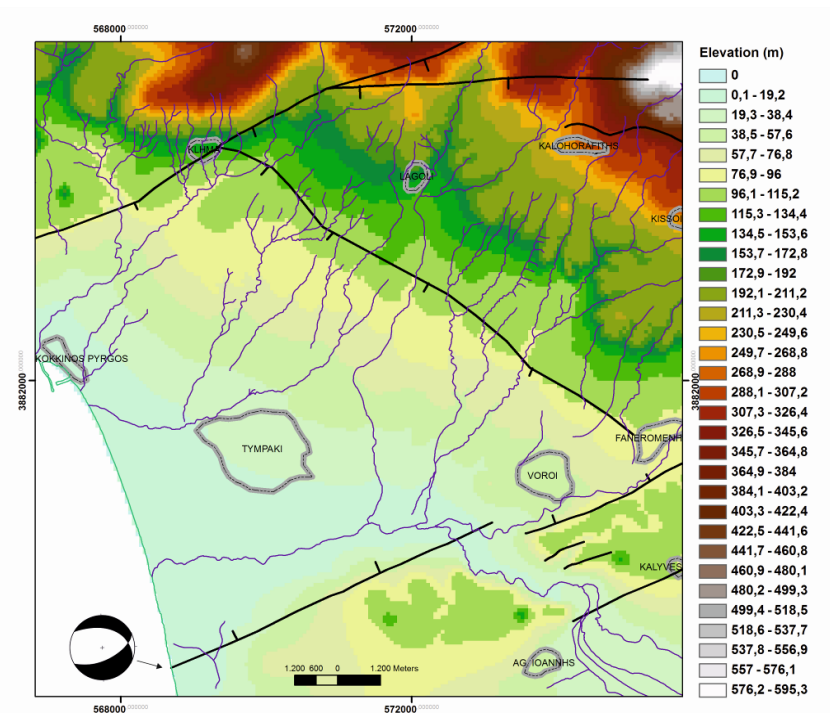
Figure 15 Elevation map [13] of Tympaki area (south Crete) superimposed by the main geomorphological features. Focal mechanism from Delibassis et al. (1999)

Process of DEM to produce integrated slope and aspect maps and define main geomorphological features of the study area(s)

Digital elevation models (DEMs) and DEM analysis methods are used for the recognition of geomorphological feature as about 90% of fault geoporhic indices can be defined quantitatively [14]. There are techniques of perspective views [15], thalvegs revealing [16], landsurface gradient and aspect mapping [17]. DEMs are applied for measuring dip and strike of known faults. However the use of indicated methods of DEMs analysis without geological data does not permit us to determine a fault morphology. Schnur (2011) [18] combined digital image processing in GIS to automatically extract the fault traces at Mid-Ocean Ridges using bathymetry data.

The results of the above approximation (see Figure 16, Figure 17) should include information about the sea-bottom and near coast morphological structure that will be later combined with information concerning the direction and speed of the wind and sea currents from on line databases in order to define how an oil spill will expand and which of the near coast areas will be mainly affected.
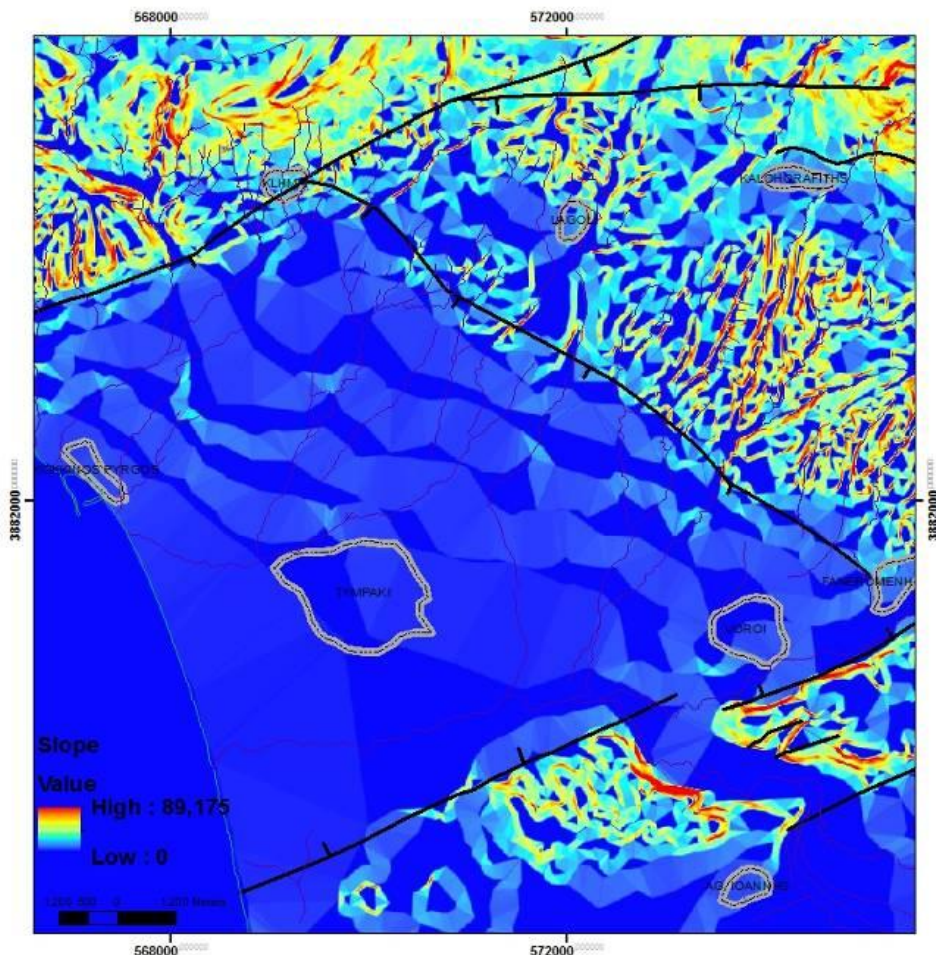
Figure 16 Slope map (°) of the area corresponding to Figure 2
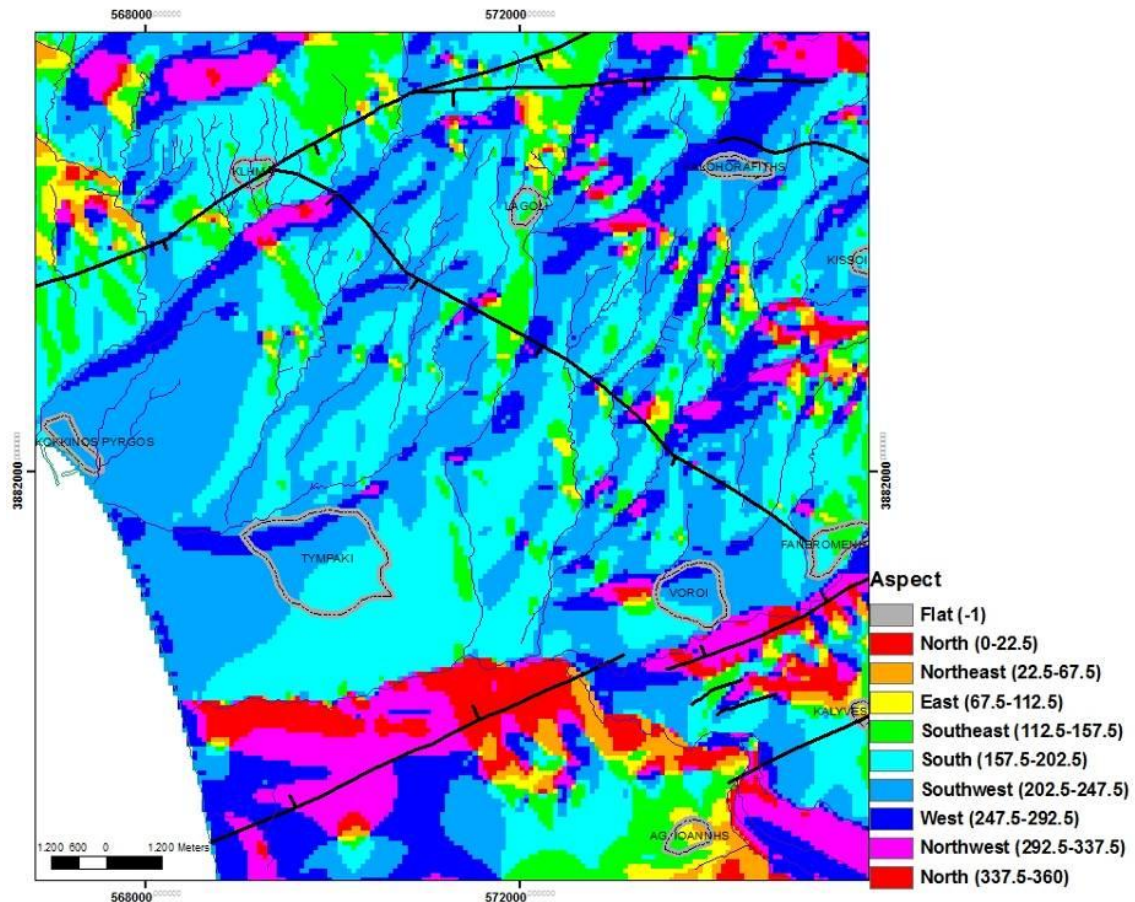
Figure 17: Aspect map of the of the area corresponding to Figure 2

References

[1] National Science and Technology Council, SDR_Report_Reducing Disaster Vulnerability Committee on the Environment and Natural Resources, An Interim Report of the Subcommittee on Disaster Reduction, July 2003.

[2] http://www.lenntech.com/environmentaldisasters.htm#5._Major_oil_spills_of_the_20th_and_21st _century)

[3] Anton, A. I. and Asplaugh, A.T. (2008) Scenario support for effective requirements, *Information and Software Technology,* 50, 3, 198-220.

[4] Douglas Paton, L. S., John Violanti (2000). "Disaster response: risk, vulnerability and resilience." Disaster prevention and management 9(3): 173-180.

[5] Rinkineva, K. (2004) the role of Information Technology in Crisis Management, *ProceedFings of the 14th EINIRAS conference*, Helsinki, Finland.

[6] Shahir et al., 2012, Generating test cases for marine safety and security scenarios: a framework Security Informatics 2012, 1:4.

[7] Emergencies, Accidents, and Spills," Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, http://www.epa.gov/oswer/emergencies. htm

[8] Kokinou E., Vafidis A., Louis, J. 2003, Seismic Tomography of the Near Vertical Incidence, Journal of the Balkan Geophysical Society, Vol 6, No. 2, 2003, p. 75 - 87.

[9]Kokinou E., Vafidis A., Loucogiannakis, M. Louis, J., 2003, Deep Seismic Imaging and Velocity Estimation in Ionian sea, Journal of the Balkan Geophysical Society, Vol 6, No. 2, 2003, p. 100 - 116.

[10] E. Kokinou, Kamberis, E., Vafidis, A., Monopolis, D., Ananiadis, G., and Zelelidis, A., 2005, Deep seismic reflection data from offshore Western Greece: a new crustal model for the Ionian sea, Journal of Petroleum Geology, Vol. 28, No. 2, 81-98.

[11] Kokinou, E. and Kamberis E., 2009, The structure of the Kythira-Antikythira strait, offshore SW Greece (35.7°-36.6N), In:van Hinsbergen D.J.J., Edwards M.A., Govers R. (eds.). Geodynamics of Collision and Collapse at the Africa-Arabia-Eurasia subduction zone, Geological Society, London, Special Publications 2009; v. 311; p. 343-360, doi:10.1144/SP311.

[12] Kokinou E., Alves T., Kamberis E., 2012, Structural decoupling on a convergent forearc setting (Southern Crete, Eastern Mediterranean), in press, Geol. Soc. Am. Bulletin, doi:10.1130/B30492.1

[13] Kokinou E., Markos A., Konstantinidou S., 2012, A multidisciplinary approach of the geotectonic structure in the Tympaki basin (south-central Crete, Greece), 4th EARSeL Workshop on Remote Sensing and Geology Mykonos, Greece, 24st – 25th May, 2012.

[14] Schowengerdt, R.A, Glass, C.E., 1983. Digitally processed topographic data for regional tectonics evaluations. Geological Society of America Bulletin, v. 94(4), p. 549-556.

[15] Campana, D.J., Levandowski, D.W., 1991. The recognition of strike slip fault systems using imagenery, gravity and topographic data sets. Photogrammetric Engineering and Remote Sensing, v. 57(9), p 1195-1201.

[16] Eliason, J.R. Eliason V.L.C., 1987. Process for structural geological analysis of topography and point data. US Patent No 4698759, International Classification G 01V 3/18, US Classification 364/420, 107 p.

[17] Onorati G, M Poscolieri, R Ventura et al., 1992. The digital elevation model of Italy for geomorphology and structural geology. Catena, 19(2): 147-17

[18] Schnur, S. R., 2011, Assessing the Effects of Extraction Method and Resolution on the Accuracy of Automatic Fault Extraction at Mid-Ocean Ridges, Master Thesis, University of Zürich.

Perform Oil spill modelling for the study area(s)

Oil spill modelling (Figs. 5, 6) will be elaborated using well established oil split model software (MEDSLIK, POSEIDON) [19-30]. These two models used in ongoing projects of EU to establish the MEDESS4M framework, in collaboration with respected agencies. The Oceanographic Center of University of Cyprus along with the Hellenic Centre for Marine Research (Institute of Oceanography) will provide reliable atmospheric, oceanographic

and sea state forecasting results, for the Cyprus and Greek seas. Such maps are of great importance for emergency responders, transportation agencies and for real-time dissemination of public information. Such maps indicate the direction of an oil spill expansion and show which near-coast areas will be mainly affected. These maps will be used for planning the scenario.
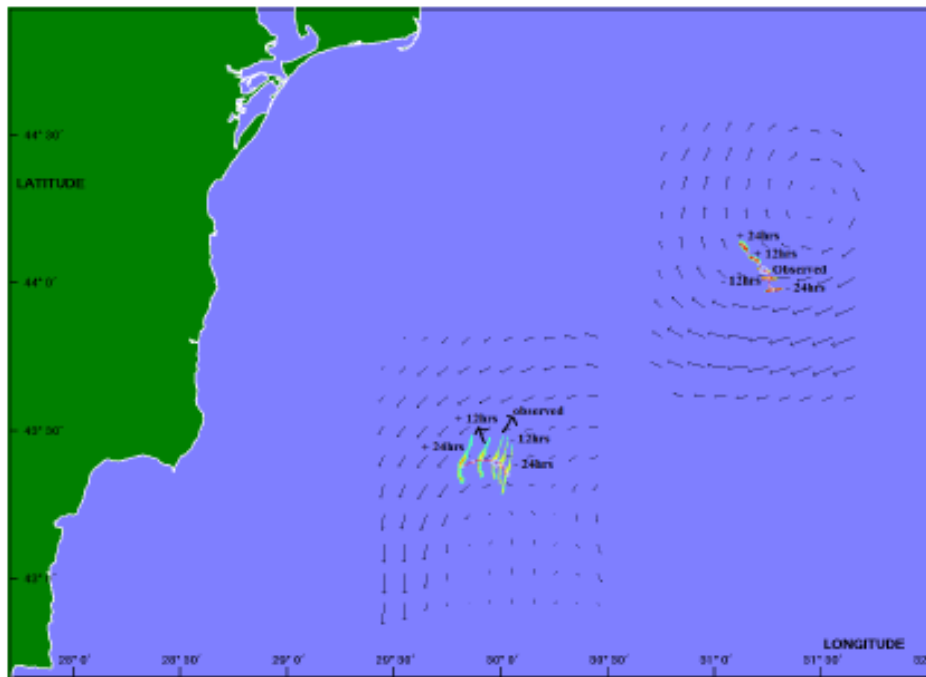

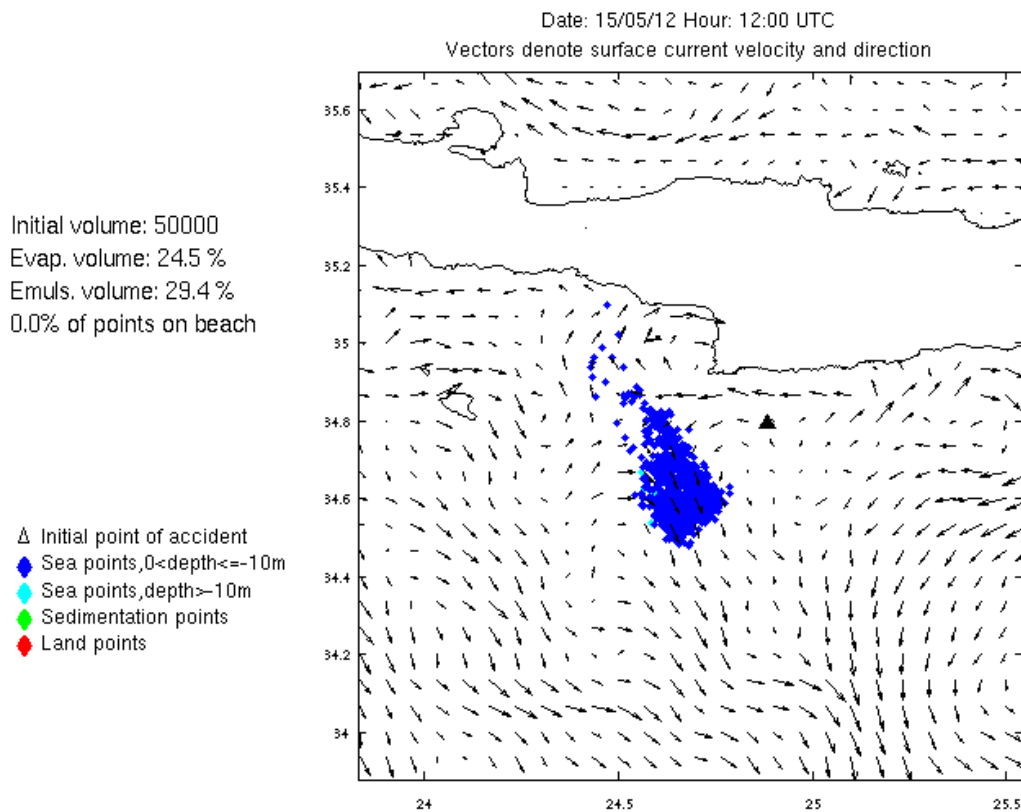**Figure 18: Forecasts and hindcasts each for 24 h of two slicks using MEDSLIK**

Date: 15/05/12 Hour: 12:00 UTC
Vectors denote surface current velocity and direction

Initial volume: 50000
Evap. volume: 24.5 %
Emuls. volume: 29.4 %
0.0% of points on beach

△ Initial point of accident
◆ Sea points,0<depth<=-10m
◆ Sea points,depth>-10m
◆ Sedimentation points
◆ Land points

Figure 19: Oil Spill modelling using POSEIDON OSM

Technical description: MEDSLIK and POSEIDON OSM

MEDSLIK Oceanography Centre, University of Cyprus (OC-UCY)

Model Name	CYCOFOS-MEDSLIK
Characteristics	MEDSLIK-Mediterranean oil spill and trajectory model is a 3D model that predicts the transport, fate and weathering of an oil spill and the movement of various type of floating objects in the Mediterranean and the Black seas. The MEDSLIK incorporates the evaporation, emulsification, viscosity changes, dispersion in water column, and adhesion to coast. MEDSLIK consists of four modules: • a setup module for model domain and parameters • a visual interface for input of the spill data; • a run module that performs the simulation and • a visual interface for viewing the output (the output is also produce in ASCII format) MEDSLIK has been integrated with the MFS, CYCOFOS, ADRICOSM and ROSARIO operational ocean forecasting systems in the

	Mediterranean and is adapted for open and coastal sea areas in the Black Sea.
Area Covere	Mediterranean, Levantine Basin
Variables Predicted	Oil slick at sea surface, evaporated, dispersed in the water column, stack on coast. Oil slick viscosity, oil density, oil slick volume. Floating objects: trajectories
Operational / Pre-operational	Operational for all Mediterranean areas, operational also for Black Sea
Source of Atmospheric Forcing	SKIRON high frequency, ECMWF , UK met office
Length of Forecast	From few hours up to 3 weeks, depend on the end user application requirements.
How many forecast cycles per day, i.e. how often is the model run?	As many as the end user application requirements.
Additional Information	MEDSLIK also includes the possibility to simulate the trajectories of floating objects and the simulation of the dispersion of a conservative and non conservative pollutant. In MEDSLIK the oil spill is modelled using a Monte Carlo method. The pollutant is divided into a large number of Lagrangian parcels of equal size. At each time step, each parcel is given a convective and a diffusive displacement. The oil is considered to consist of a light evaporative component and a heavy non evaporative component. Emulsification is also simulated, and the viscosity changes of the oil are computed according to the amounts of emulsification and evaporation of the oil. Slick Transport - The transport of the surface slick is governed by both water currents and by direct wind forcing. - Diffusion of the slick is modelled by a random walk (Monte Carlo) model. Oil may be dispersed into the water column by wave action (Mackay & Buist algorithm). Dispersed oil is moved by currents only. Mechanical spreading of the initial slick is included (modified Fay algorithm). Fate processes included in the model - Evaporation of the lighter oil fractions (Mackay).

Mixing into the water column by wave action (Buist & Mackay).

- Emulsification (Mackay, Leinonen & Paterson).
- Beaching on the coast and absorption depending on the coastal type (Shen, Yapa & Petroski, after Torgrimson).

Other features of the model:

- The model includes a built-in database (from REMPEC) of over 220 oil types that are the most common in the Mediterranean and the Black seas.
- The model allows to switch from coarse to high resolution forecasting ocean data, when the oil slick passes from a coarse to a higher resolution domain.
- The model allows assimilation of observations, in-situ or aerial to correct the oil spill predictions.
- The effect of deployed of oil booms can be examined.
- Simultaneous oil spills from moving or drifting ships whose slicks can be merge modelled together.
- Hindcast (backtracking) simulations for tracking the source of pollution.
- Integration with the AIS in the Eastern Mediterranean Levantine Basin

The model includes a simple GIS to allow information on coastal and open sea resources.

The results of the oil spill and trajectory predictions are available in the following output formats:

- image: BMP or PNG, TIF,GIF, JPG
- ASCII
- Google Earth: KML

Major end users of the MEDSLIK predictions are several MS, EU and International agencies in charge to response in major oil spill incidents in the Mediterranean and the Black seas, as well in assisting search and rescue centers during their operations in the above seas.

Numerical basis of the model; Model Area	Mediterranean, Levantine Basin
Num of parcels	Up to 100000

Num of vertical levels	4 to 70
Resolution	Size of the parcel from 10 to 100 meters
Computer used	Win XP systems. The MEDSLIK run module can be used in linux systems too
Validation method	<u>Validation of MEDSLIK model:</u> Real oil spill incidents: Lebanese oil pollution crisis, summer 2006, is considered the major oil pollution in the Eastern Mediterranean so far. EMSA warning reports for the Levantine basin, 18th June 2007 and 18th June 2008 c)Inter-comparison exercises : 1) with the trajectories of 3 ARGOSPHERE drifters in the Levantine Basin, in the framework of the EU MERSEA-IP project, Sept.-Dec. 2007. 2) with the trajectory of an SVP drifter in the Levantine Basin, in the framework of the EU ECOOP project, Feb.-May 2008. 3) with the MOTHY and 3OD3 oil spill models in the Levantine Basin, in the framework of the EU MERSEA-IP project, Sept.-Dec. 2007. 4) with OILSLIK and DIFUP oil spill models in the North Aegean Sea (Koftis 2002).

POSEIDON OSM Institute of Oceanography, Hellenic Center for Marine Research (HCMR)

Characteristics

The POSEIDON Oil Spill Model is a fully 3D oil spill model capable to simulate the movement, spreading and aging of the oil particles in the 3-D space. The whole mass of the oil is represented by a large number of material particles or parcels, each of which represents a group of oil droplets of like size and composition.

The oil transport is described by two modules, the circulation module and the wind generated waves module. The horizontal displacement due to advection and the vertical transport of the oil are calculated using the output of the oceanographic (POM) model. The net current speed caused by linear waves (Stokes drift) is calculated using the wave model (WAM) output.

The horizontal and vertical mixing coefficients of the hydrodynamic model (in Aegean application the Smagorinsksy formula and the Mellor-Yamada 2.5 closure scheme accordingly which are part of the standard POM model code) are used for the horizontal and vertical diffusion calculations. The method used to characterize the evaporation of the oil has suggested by Stiver and MacKay (1984) and Stiver et al. (1989). The emulsification process is described by Riemsdijk van Eldik et al. (1986). Finally, for beaching and sedimentation processes the model uses the Gundlach approach (1987).

Model's input data:

- Initial location of the oil spill (latitude, longitude)

- Date and time of the event

- Total volume of oil disposed in the sea

- The number of the particles describing the volume

- Critical density for evaporation and emulsification

- Retention time (how long an oil particle stays in the beach)

- Evacuation time (instant disposal in the sea or not)

Requirements from other numerical models:

- 3-D flow field from a general circulation oceanographic model (in the current configuration the POM model is used)

- Vertical mixing coefficient from the oceanographic model

- Wave field from an offshore wind wave model (in the current configuration the WAM model is used)

Area Covered	Current operational implementation: Aegean / Ionian Seas down to Libyan coasts (20-29°E, 30-41°N).
Area Covered	Current operational implementation: Aegean / Ionian Seas down to Libyan coasts (20-29oE, 30-41oN).
Variables Predicted	• Position of each particle in the sea (longitude, latitude and depth) • Evaporated volume of the initial oil • Emulsificated volume • Volume remain in the beach • Oil volume reached the sea floor

Operational / Pre-operational	Operational Yes	Pre-operational	

Source of Atmospheric Forcing	HCMR ETA non hysdrostatic atmospheric model
Length of Forecast	From few hours up to 5 days, depend on the end user application requirements.
How many forecast cycles per day, i.e. how often is the model run?	As many as the end user application requirements.
Additional Information	POSEIDON OSM is a standard module of the POSEIDON Operational Oceanography System that has been implemented and operated in the Greek Seas since 1999. The model was further developed and upgraded during the ESA's projects ROSES and MARCOAST. Currently, the POSEIDON OSM is the forecasting component of MARCOAST integrated oil spill service which is operationally provided in the Aegean Sea during the last three years (2006-2008). This later service is an integration of the oil spill detection processes that is applied on satellite based SAR images together with the forecast of oil spill evolution which is provided by the HCMR oil spill system. The core user of this service is the Marine Environment Protection Division (MEPD) of the Greek Ministry of Mercantile Marine which is the responsible authority for the surveillance of the Greek Seas. The user receives near real-time (in one hour after satellite overpass) synthetic information concerning the oil

	spill detection and the relevant forecasts in the Aegean Sea through a dedicated web site and is alerted by e-mail/fax/telephone of new information posted to the site.	
Numerical basis of the model	Model Area	Greek Seas (Aegean, Ionian down to Libyan coasts, i.e. 20-29°E, 30-41°N), entire Mediterranean Sea
	Number of parcels	Can be configured from few hundreds to several thousands
	Number of vertical levels	Adjusted to the oceanographic model's vertical resolution
Resolution		
Computer used	Linux/Unix based systems	
Validation method	No direct validation of the model is done until now. An indirect approach can be based on the validation of the individual models and mainly of those that provide the forcing parameters: the atmospheric model (providing forcing for the ocean models) and the two ocean models (providing forcing for the oil spill module). These three models are operational since 1999 providing 72 hours forecasts on a daily basis and, thus, their validation is being carried out routinely by the POSEIDON forecasting group against independent data sets such buoy, XBT and satellite observations. According to this routine validation (Nittis et al. 2001) the atmospheric model forecasting skill presents very good statistics for air temperature and atmospheric pressure (bias score 95-105%) and lower skill for surface wind speed and direction (bias score 85-109 % with maximum underestimation of 77% in specific coastal areas). The hydrodynamic model statistics similarly present better skill for sea surface temperature (95-104%) and lower skill for surface current (75-125%). In deeper layers, the forecasting skill for temperature is increased during the winter period when the surface forcing penetrates deeper, while it is decreased during the summer period (Zervakis et al. 2001). Finally, the wave model validation has revealed an underestimation of high wave heights with typical relative error of 0.19-0.31 and maximum values reaching 0.5 in coastal areas (Soukissian et al 2002)	

References (Oil Spill Modelling)

1. Brostrom, G., Carrasco, A., Daniel, P., Hackett, B., Lardner R., Panayidou, X., Paradis, D., Zodiatis, G. : Comparison of different oil drift models and different ocean forcing with observed drifter trajectory in the Mediterranean", 5th EuroGOOS Conference, Coastal to Global Operational Oceanography: Achievements and Challenges, Abstracts Book, 120p, Exeter, UK, 20-22 May, 2008.

2. Coppini, G., De Dominicis, M., Zodiatis, G., Lardner, R., Pinardi, N., Santoreli, R., Colella, S., Bignami, F., Hayes, D., Solovyov, D., Georgiou, G., Kallos, G.: Hindcast of oil spill pollution during the Lebanon crisis in the Eastern Mediterranean, July-August 2006. Mar. Pollut. Bull., doi:10.1016/j.marpolbul.2010.08.021, 2010.

3. De Dominicis M., Pinardi, N., Fabbroni, N., Coppini, G., Zodiatis, G. and Lardner, R. : Oil spill forecasting in the Mediterranean Sea, Proceedings of 5th International Conference on EuroGOOS, Coastal to Global Operational Oceanography: Achievements and Challenges, publication N. 28, 521-524, 2010.

4. De Dominicis, Pinardi, N., Zodiatis, G., Archetti, R. and Lardner, R.: Advanced marine oil spill modelling for short-term forecasting. Part II: Numerical simulations (in preparation), 2012.

5. De Dominicis, Pinardi, N., Zodiatis, G. and Lardner, R.: Advanced marine oil spill modelling for short term forecasting. Part I: Theory (in preparation), 2012.

6. Galanis, G., Hayes, D., Zodiatis, G., P.C. Chu Yu-Heng Kuo and Kallos, G.: Wave height characteristics in the Mediterranean Sea by means of numerical modelling, satellite data, statistical and geometrical techniques, Marine Geophysical Research, DOI: 10.1007/s11001-011-9142-0, 2011.

7. Lardner, R., Zodiatis, G., Hayes, D. and Pinardi, N.: Application of the MEDSLIK oil spill model to the Lebanese spill of July 2006. European Group of Experts on satellite monitoring of sea based oil pollution, European Communities ISSN 1018-5593, 2006.

8. Zodiatis, G., Lardner, L., Demirov, E., Georgiou, G., Manzella, G. and Pinardi, N.: An Operational European Global Ocean Observing System for the Eastern Mediterranean Levantine Basin: The Cyprus Coastal Ocean Forecasting and Observing System, Journal of Marine Technology Society, 37, 3, pp.115-123, 2003a.

9. Zodiatis, G., Lardner, R., Lascaratos, A., Georgiou, G., Korres, G., Syrimis, M.: High resolution nested model for the Cyprus, NE Levantine Basin, eastern Mediterranean Sea: implementation and climatological runs, Annales Geophysicae, 21, 221-236, 2003b.

10. Zodiatis, G., Lardner, R., Hayes, D., Solovyov, D., Georgiou, G.: The successful application of the Mediterranean oil spill model in assisting the decision makers during the oil pollution crisis of Lebanon in summer 2006, Rapp.Comm.int. Mer Medit., 214, 38, 2007.

11. Zodiatis, G., Lardner, R., Hayes, D., Georgiou, G., Sofianos, S., Skliris, N., Lascaratos, A.: Operational ocean forecasting in the Eastern Mediterranean: implementation and evaluation, Ocean Science 4, 31-47, 2008.

12. Zodiatis, G., Hayes, D., Lardner, R., Georgiou, G., Kallos, G., Sofianos, S., Pinardi, N. and Panayidou, X.: Marine core and downstream oceanographic services in the Eastern Mediterranean Levantine Basin and their success in assisting the EU response agencies, Proceedings of the 5th EuroGOOS Conference, Coastal to Global Operational Oceanography: Achievements and Challenges, publication N. 28, 465-472, 2010.

13. Zodiatis, G., Lardner, R., Nikolaidis, A., Stylianou, S., Panayidou, X., Hayes, D., Galanis, G. and Georgiou, G.: MyOcean products in the CYCOFOS Decision Support System for Marine Safety, Proceedings of the 6th EuroGOOS Conference, 2011 (submitted).

14. diatis, G., Lardner, R., Solovyov, D., X. Panayidou: Predictions for oil slicks detected from satellite images using MyOcean forecasting data, 2012 (submitted in Ocean Science).

Task C: eLearning – Skills Development

Overview

In this task, the risk assessment component (Task B) and the collection of incidents in a harmonized format (Task F) will be brought together with preparedness plans (Task D) in three phases overlapping development, training sessions and evaluation, to create a solid resource of training material to encourage collaboration and improve coordination among participating members of the EU protection Mechanism and beyond in the case of Marine Pollution accidents.

The task will start with the development of a portal that will accommodate the Web Site of the project (Task G) and different training resources (Task C), evaluation instruments (Task E), and the harmonized incident database (Task F). Along with this activity the customization of SAHANA, an open source environment for preparedness in civil and marine protection will be developed. At the same time, significant effort will be invested in the creation of educational material for the etraining, online games, traditional and innovative approaches to eLearning and social engagement of civil protection workers and volunteers. User guides and manuals will be created, and training session will be organized by the Civil and Marine protection authorities in Greece and Cyprus.

"Education is evolving from an individual to a team sport, where the instructor as coach designs a curriculum that guides active student learning through multiple channels," said Nancy Kane, professor of management and associate dean for educational programs at the Harvard School of Public Health."

(http://news.harvard.edu/gazette/story/2012/05/ahead-of-the-learning-curve/?utm_source=SilverpopMailing&utm_medium=email&utm_campaign=05.29.12.a%2520%281%29&utm_content)

The whole task will proceed in threed phases that will overlap development, training and evaluation.

Development of educational material using situational reports for marine pollution

FORTH-ICS and TEI Crete supported by Cyprus CD and marine pollution experts will develop educational material to train public officials and volunteers. The educational material will include:

- Presentations in the context of workshops concerning the results of the oil spill scenario.

- Periodic reports on pollution incidents concerning the dispersion of the oil spill, meteorological and hydrographic data for the wide area of the oil spill accident.

- Preparedness questionnaires.

- A guide, showing how to organize a technical report concerning details of the problems encountered.

- Reports on assessment of the environmental and economic damage for the affected areas of the risk scenario.

- Reports concerning the assessment of the response operation, including reference to equipment used its effectiveness, additional equipment, and training needs.

Having the above educational material in mind, techniques and existing tools like Facebook, Twitter, Google Docs etc. may be used, for crowdsourced reporting, for the civil protection and marine pollution community (professionals, volunteers and other related stakeholders), in a way that spreading knowledge and sharing experience will be resourceful and efficient.

ICT application to be used and developed: eLearning portal

End users are utilizing web-based computing more than ever leading to an undisputable need for tools that provide access to knowledge and learning from almost everywhere. An eLearning portal for spreading knowledge about civil protection and marine as well as sharing experiences will be developed for civil protection and marine pollution professionals, volunteers and other related stakeholders in order to meet the needs.

They will have the possibility to find online resources, courses timetables, lecture materials, preparedness valuable information, study notes, best practices, and situational reports concerning civil protection and marine pollution along with other useful features that will give them the chance to educate and increase their awareness and skills on the appropriate fields.

A modular approach will be followed to improve maintainability, flexibility and efficiency for the structural content to be used and collaboration between stakeholders to achieve the goal.

Figure 7: eLearning Portal (Twister Project 2004-2007)

Online Social Games

Online social games could have the potential to be a significant tool for self-training due to the stakeholder's social interaction, the attractiveness of the games as well as the immersive activities. These days the increasing use of social networks, social games found their way into the daily life of any internet users where they play these browser games online. These games may deliver boards where stakeholders become familiar with another way of learning by doing things rather than listening or reading having the possibility to improve their comprehension and information retention rate.

ICT-based learning requires not only underlying technologies and software applications but sophisticated didactical usage concepts in order to successfully and effectively employ ICT-based media for comprehensive educational tasks. It shall promote in a playful manner the motivation and the mental training in self-help of the marine pollution field.

The ICT learning game (web-based) to be developed as an eLearing tool will offer the prospects to the civil protection and marine pollution professionals, volunteers and other related stakeholders to advance self-help skills and awareness for marine pollution incidents. It will be based on structured scenarios contributed by the experts and realized to simulate processes for marine pollution as quests. Educational material will be relevant to the needs of the stakeholders. The development of language versions of the scenarios is another consideration so as to improve the regional use in the target regions. The

aspects of the game must cover topics such as attraction and motivation for self-help themes, attractiveness for the target group, maintainability and sustainability, feasibility within the project framework and upgrade capabilities.
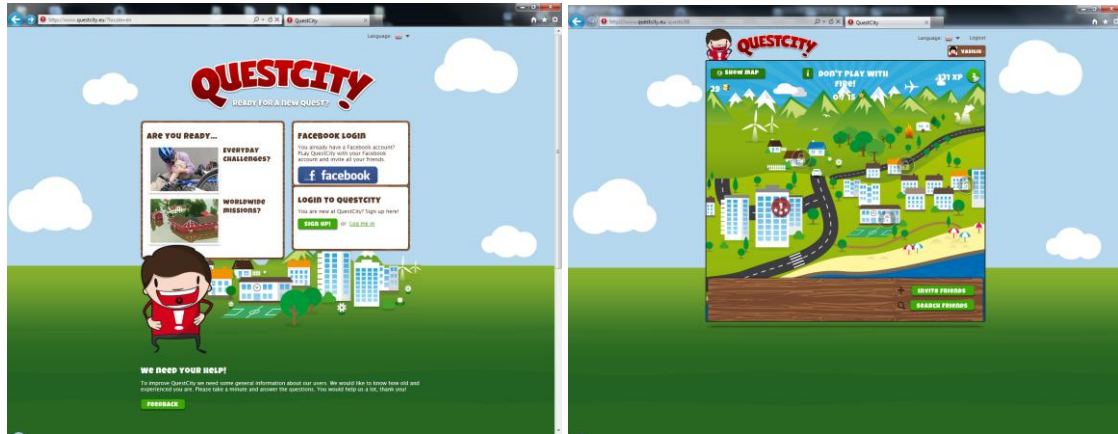

Figure 7: PC Learning program "QuestCity" (e-self- help Project 2010-2011)

ICT application to be used: "Sahana FOSS Disaster Management System"

"Sahana FOSS Disaster Management System" is a collection of web based disaster management applications that provide solutions to large-scale humanitarian coordination and collaboration in disaster situation and its aftermath (http://sahanafoundation.org/).

This Disaster Management System is a global free and open source web-based system. This is essential because it gives the freedom to be modified to specific disasters and open for further development to extend disasters coverage. Sahana has been deployed in disasters such as Tsunami - Sri Lanka 2005, Asian Quake - Pakistan 2005, Southern Leyte Mudslide Disaster - Philippines 2006, Sarvodaya - Sri Lanka 2006, Terre des Hommes - Sri Lanka 2006, Yogjakarta Earthquake - Indonesia 2006, Peru Earthquake - Peru 2007, Myanmar Cyclone - Myanmar 2008, Haiti Earthquake - Haiti 2010 (http://en.wikipedia.org/wiki/Sahana_FOSS_Disaster_Management_System).

The civil protection and marine pollution professionals, volunteers and other stakeholders will be educated and trained on using this system in order to manage disaster coordination problems, spreading knowledge, improving rapid information sharing, providing situation awareness, increase their skills in using such systems and handle situations in a more organized way. Furthermore, the system will be modified, configured and customized to meet the needs of civil protection and marine pollution disaster situations so that the right information will be managed and shared. The modified version of the system can be used in small scale exercises within the project.
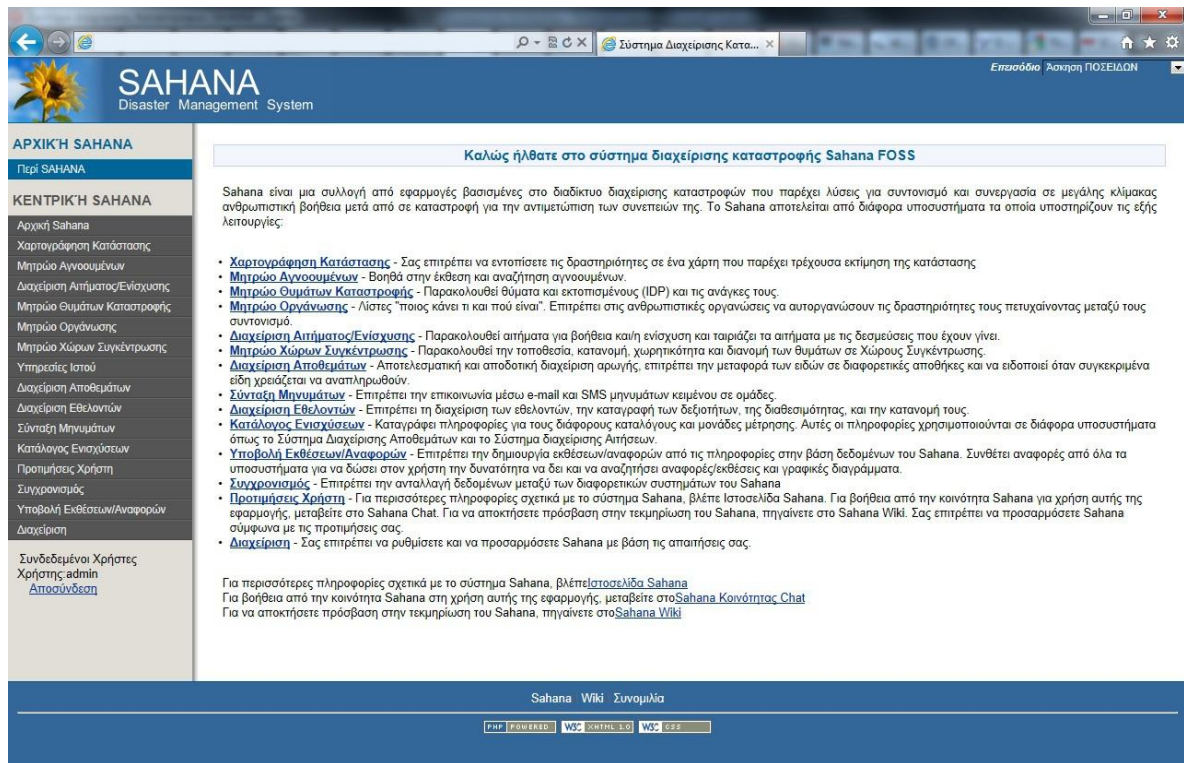
Figure 8: Sahana Disaster Management System (Poseidon Project 2009-2011)

Additionally, the appropriate data for all the levels of the Crete-Civil Protection offices and administrations will be collected and imported into Sahana, in such a way that can be used as the disaster management system in the region by civil protection professionals and specially trained volunteers for all disasters (primary for Marine Pollution for the purpose of the Project) and be a reference to other regions of Greece and Cyprus.

Development of application for mLearning

Most of the people nowadays use mobile devices as part of their day-to-day life and consider them an essential tool in their communication activities. Personal technology has changed our lives and can considerably contribute to improve and increase awareness and skills of the appropriate personnel and volunteers in case of disasters. In the framework of this project, innovative technologies can be used for personal devices (smartphones, tablet PCs) to meet the goals of increasing the skills and awareness of the appropriate personnel and volunteers and sharing experience aiming at limiting the consequences of emergencies. These technologies can benefit significantly in the process of learning that can be delivered and supported by mobile technology.

Such technologies give the possibilities to the stakeholders to have, just in time learning, review the learning content, access to necessary information, educate themselves, collaborate using conferencing, and social networking, use of assessments that can be based on their skills and enhance them as well as giving them the chance to take electronic notes.

The mobile learning tool will incorporate material that will be easy-access and easy-to-use. A modular approach will be adopted, creating different areas of content allowing the civil protection and marine pollution professionals, volunteers and other related stakeholders to increase their awareness and skills by choosing the appropriate section for education. Educational material (appropriate learning content) for civil protection and marine pollution will be developed and delivered in the mobile device with content straight to the point, guidelines for marine pollution, multiple choice quizzes and other characteristics that will make self-training a very helpful learning tool.

Embracing innovative experience from previous projects, applications and web applications were designed and developed from FORTH-ICS for mobile devices (smartphones, tablet PCs), in the area of civil protection and medical emergency services.

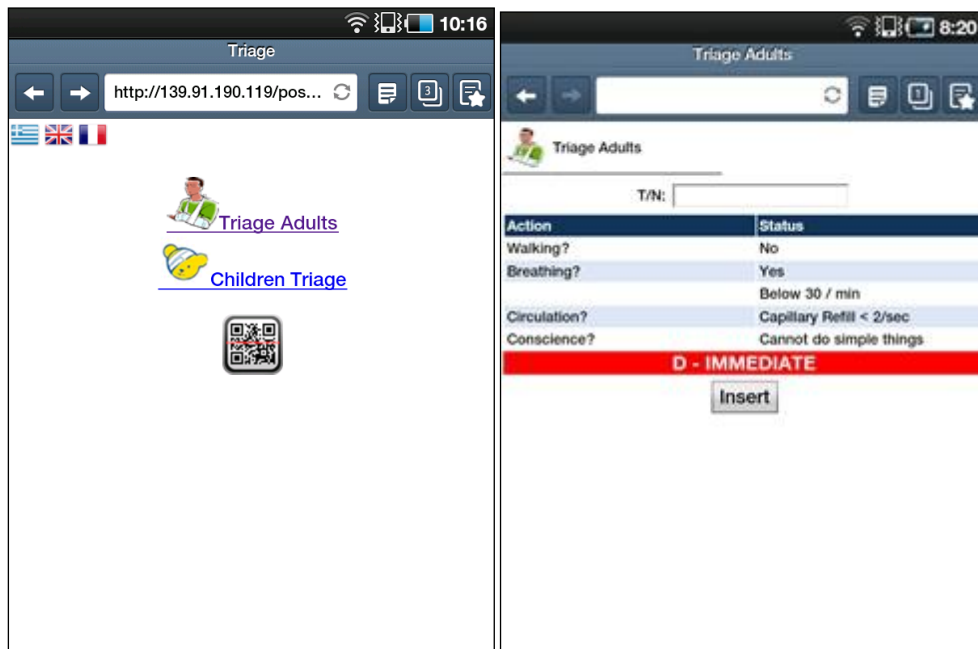**Figure 9: Use of PDAs to perform on line triage (SAFE 2007)**

Figure 10: Use of Tablets/smartphones to perform elaborated protocol based eTriage (using QR Codes) within integrated triage system and collection of health information (POSEIDON 2009-2011)
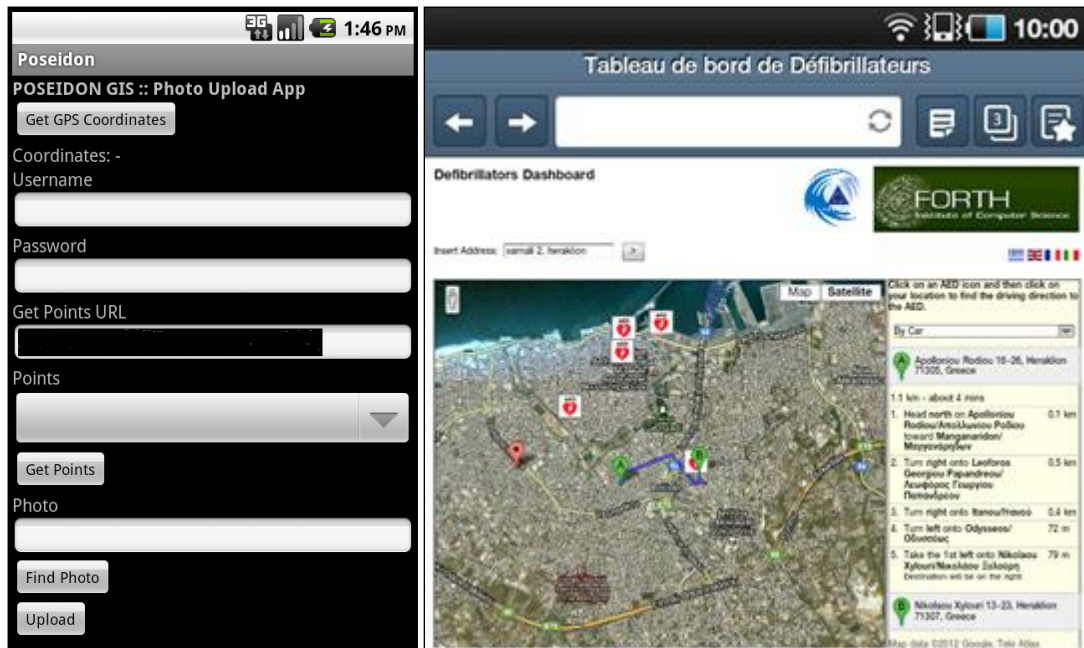
Figure 11: Use of Tablets/smartphones to perform a) fast image upload from disaster area and b) search and get directions to the available nearby AEDs (POSEIDON 2009-2011)

Training of participants on the use of ICT services

The development of human resources through appropriate education and training is a key factor in introducing new working and learning methods for civil protection professionals and volunteers and empowering them to use ICTs to obtain information and extend their knowledge.

Training is important when dealing with ICT systems and is ever more vital in managing emergencies. Adequate training will be provided to the civil protection and marine pollution professionals, volunteers and other related stakeholders. Specific seminars are foreseen for the above participants giving them the opportunity to become familiar with the eLearning tools that will be provided, used and developed within the project for spreading knowledge about civil protection and marine pollution.

Technical guidelines and manuals will be created and provided necessary for the training of personnel explaining them the use of the advanced ICT applications and services.

eTraining Sessions

The training service aims to provide high quality educational services to civil protection and marine pollution professionals, volunteers and other related stakeholders to facilitate continuous education and training to them, in remote areas at the same time. The appropriate sessions will be organized using web conference solutions to deliver synchronized sharing experience and collaboration over the internet, in the field of civil protection and marine pollution.

Multimedia tele-education and tele-training can be realised off-line (optical discs) or download from the eLearning portal as a registered user for a second solution.

A very efficient and cost effective Training Service may be realised in a web conference, where a trainer talks to his trainees. Everyone sees and hears all others. This solution certainly requires high-speed connections and a suitable application to support voice/video conferencing, group chat, slide presentation, whiteboard etc.

The trainees may ask questions in real time or later on by email. Using the eLearning portal information may be derived for anything respecting the lessons, a discussion forum where students may exchange ideas or look up answers to their questions that have already been asked. Online competency assessment tests and questionnaires will give the opportunity to the participants to assess the quality of the service and the knowledge obtained.

It is essential to evaluate the service as mentioned above having in mind parameters such as

- Organizational issues (training content, training schedule preferences for instance time/date of delivery, duration, site preparation)
- Course delivery (quality of the educational material, experience of the instructor in teletraining
- Course material (relevance of the topics, availability of the material after the course, endorsement by civil protection and marine pollution societies)
- Course impact(competency assessment tests of the students, knowledge retention)

Figure 20 eTraining in Health Care Emergency using heterogeneous networks (Twister Project 2004-2007)
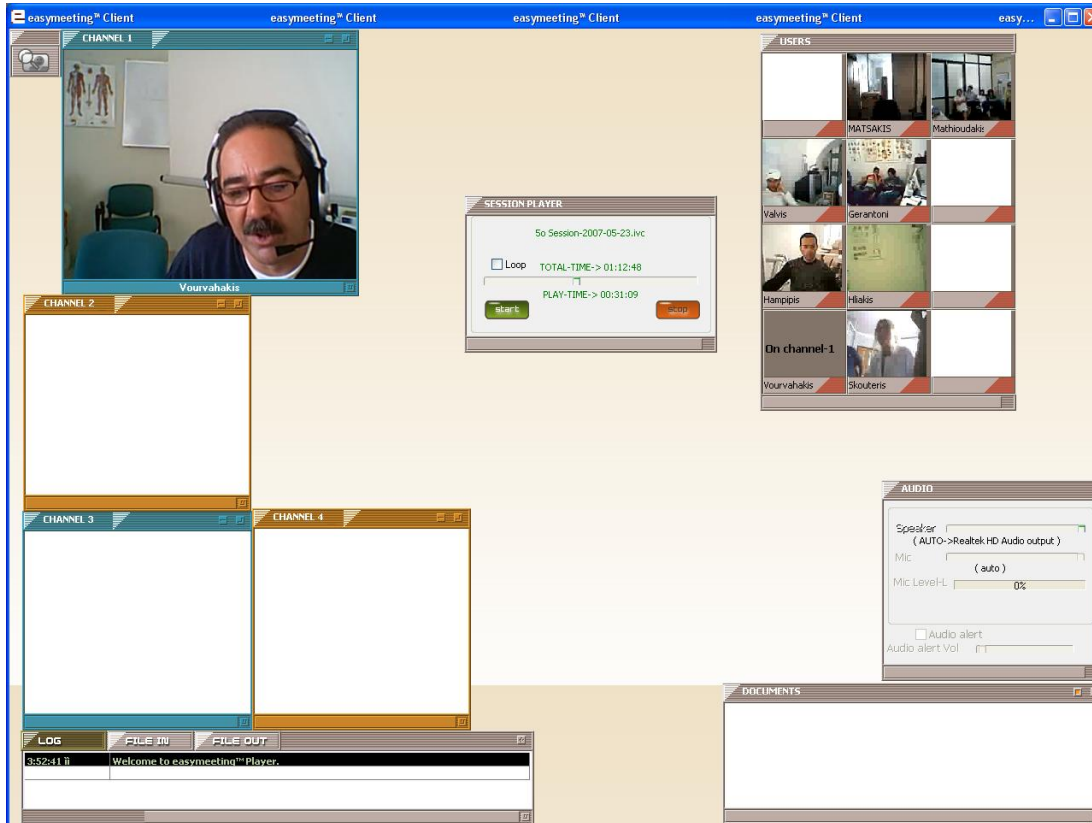

Figure 21 eTraining in Health Care Emergency and Cardiology using satellite solutions (Healthware Project 2005-2008)

Task D: Host-Nation, Best Practices, Regional, National & International Cooperation

Cyprus-Greece Cooperation

In case of emergency in Cyprus or in Greece there is cooperation and during the previous years, like the earthquake in 1999 and the forest fires in 2007 and 2009 in Greece, Cyprus sent assistance (search and rescue teams, civil engineers, financial support, etc). After the explosion in the naval base in Cyprus in 2011 and the problems with the shortage of the power supply Greece responded the request of the Cyprus Republic and sent generators through the EU Civil Protection Mechanism.

CCD, Participation in EU Civil Protection Mechanism

Cyprus Republic participates through Cyprus Civil Defence (CCD) in all activities of the EU Civil Protection Mechanism and we are conducting in Cyprus since 2006 one of the trainings, the Assessment Mission Course (AMC) where most of our essential services support the course. http://ec.europa.eu/echo/civil_protection/civil/prote/pdfdocs/Training%20brochure.pdf

Cyprus Civil Defence registered in CECIS a TAST module jointly with Johanniter International Assistance. EUTAC Project www.eutac-project.eu/

Host Nation Support

EU **Host Nation Support** Guidelines on 18 January 2012. The HNS Guidelines are intended to support and assist affected states in receiving international assistance, whether in the preparedness or disaster response phases. They highlight key actions to be taken in relation to emergency planning, emergency management and coordination, logistics, transport and legal and financial issues. Although they are non-binding, states participating in the EU's Civil Protection Mechanism are encouraged to apply these Guidelines in the course of operations within the EU and in cases of bilateral assistance. A checklist setting out steps to address potential obstacles is annexed to the HNS Guidelines, as are template documents for requesting and offering international assistance.

"Host Nation Support" implies all actions undertaken in the preparedness phase and the disaster response management by a Participating State in the Civil Protection Mechanism (PS) receiving or sending assistance, or the Commission, in order to remove as much as possible any foreseeable obstacle to international assistance so as to ensure that disaster response operations proceed smoothly. It also includes the support that Participating States can provide to facilitate international assistance transiting their territory by land, sea, or air.

A **best practice** is a method or technique that has consistently shown results superior to those achieved with other means, and that is used as a benchmark. In addition, a "best" practice can evolve to become better as improvements are discovered. Best practice is considered by some as a business buzzword, used to describe the process of developing and following a standard way of doing things that multiple organizations can use. Best management practice for complex problems is context specific and often contested against a background of imperfect knowledge. In these contexts, it is more useful to think of best management practice as an adaptive learning process rather than a fixed set of rules or guidelines. This approach to best practice focuses on fostering improvements in quality and promoting continuous learning.

All the above practices will be taken in to consideration in order to improve our plans in all phases. Our experiences from the Lebanon Crisis in 2006 and the Electricity Power shortage in 2011 will enhance us to make improvements.

During the EU funded Poseidon Exercise in Crete, Greece, 24-25 October 2011, we implement the scenario which included the procedures for the acceptance of external support and the cooperation with the host nation. http://84.205.229.30/poseidon/

Task E: Evaluation of elearning - knowledge management / retention

Objectives

The objectives of NEREIDs as far Evaluation of Knowledge management and retention is concerned are as follows:

- Collect information on existing evaluation methodologies for multimodal training and social media in civil and marine protection

- Develop a framework to evaluate the impact of training and retraining based on a mixed of technologies eLearning, online games, table top exercises

- Evaluate the impact of the NEREIDs approach on the training of professionals and volunteers

Methodology

This task will proceed in three phases that will interlace co-operative development of innovative methods for learning that are mainly targeted to professionals and volunteers.

The first step of the process involves "Review of Evaluation Methodologies for training in Civil & Marine Protection" (E1) and it will take place in the first 3 months of the project workprogramme.

Members of the European Civil protection mechanism and organizations functioning in the area of civil protection (both professionals and volunteers) will be approached from the beginning of the project to investigate their approach to evaluating training and re-training of the workforce. The EU e-competence framework will also be investigated in relation to relevant material. At the end of this period we expect to have gained better understanding of the methods employed in the evaluation of training using different media in civil protection; compilation of relevant indicators and success criteria.

The next step, involves setting up the evaluation framework for training in Civil and Marine Protection. Based on the results of E1, a framework will be set up for the evaluation of the NEREIDs actions with response to training, as carried out in action D. This framework will provide a general evaluation approach and will comprise evaluation metrics for capacity building in risk assessment (task B), but also different online and offline activities including the use of ICT in civil protection and marine pollution. The framework will engage the notion of trainee profiles, assessment questionnaires measuring aptitude at the different stages of training, but also after training is completed.

The main results of this step which will be completed within the first 6 months of the project will be instrument for assessing training needs at a personal and macro scale for civil protection and aversion of marine pollution.

Finally, the evaluation itself will occur in three phases. After each evaluation phase, the developers will be given 1-2 months to adjust the software based on the comments of the trainers and the trainees.

Specifically, the evaluation program, including two tabletop exercises that will support training on the Host Nation legislation, appears in the following table:

Date	Event Name	Organizer	Size
Month 7	Disaster Workshop	Cyprus	50 people
Month 7	Tabletop Exercise	Direction of Civil Protection, Crete	70 people
Month 11	1st Evaluation Workshop	Civil Defence, Cyprus	70 people
Month 16	2nd Evaluation Workshop	Cardiff Univesity (AB5)	50 people
Month 21	Tabletop exercise, 3rd Evaluation Workshop	Civil Defence, Cyprus	70 people
Month 24	Final Conference	FORTH, Crete	100 people

The tabletop exercise in Crete will provide the first opportunity to pre-evaluate the next-generation learning tools that will be created in NEREIDs. Following the tabletop exercise there will be minimal time to adjust the tools, as the first training period starts shortly there after.

In the 11th month of the project the first evaluation workshop will take place in Cyprus. Evaluation results from the first training period will be discussed in the workshop, aiming to identify gaps and suggest improvements.

The suggestions will be taken up in the 2nd version of the tools, that will enter testing in month 13 for 3months. In month 16, during the 2nd workshop additional scenarios will be suggested and integration with the incident database (output of Task F) will be discussed.

Finally, in month 21, the 2nd tabletop exercise and 3rd evaluation workshop will take place in Cyprus.

Task F: Multinational incident report database

An **incident report** is a form that is filled out in order to record details of an unusual event that occurs, such as an explosion, an earthquake etc. The purpose of the incident report is to document the exact details of the occurrence while they are fresh in the minds of those who witnessed the event. This information may be useful in the future when dealing with liability issues stemming from the incident. People often use the information obtained from incident reports when formulating plans or profiles, to develop support strategies and when making decisions. Consequently, it is extremely important for the content of the Incident Report to reflect clear information in a factual, unbiased manner to avoid passing along opinions and judgments. The report must be filled out as soon as possible following the incident (but after the situation has been stabilized). This way, the details written in the report are as accurate as possible. A good report must be accurate and specific, factual, objective, clear, complete, concise, well organized, grammatically correct and light on abbreviations. Incident Reports are legal documents, which may be viewed by the individual, his/her guardian, designee or legal representative and may be utilized by courts.

Our intention is to create a database with all the details from the incidents since 1950, that happened in Mediterranean Countries, Europe and worldwide. The database will give the ability to the users to process data and extract various reports. This will be useful for professionals and other stakeholders.
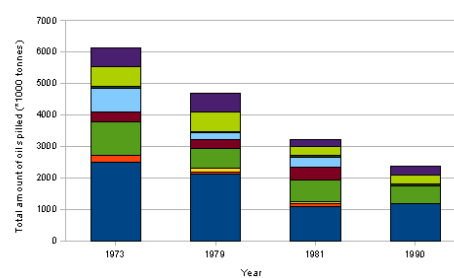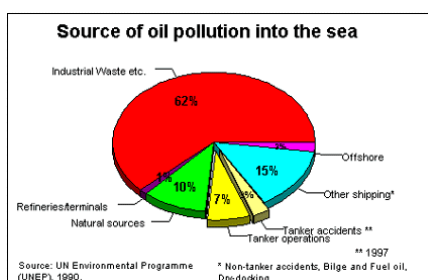
TASK G: Task publicity, Awareness, Dissemination, and Liaison

Objectives

The objectives of this task are as follows:

- Develop project website; link to education portal

- Exploitation and Intellectual Property rights

- Targeted awareness raising, national and international activities

- organization of events, information days, seminars, workshops

- Standardisation and liaise to leading European and International organisations in the field

Expected Results

The expected results of this tasks are as follows:

- Dissemination plan

- Project Web site

- Proceedings NEREIDs workshops, exercises, etc

- Report on standardization efforts

- Report of the targeted Awareness raising activities, and scientific results. Promotion of training material (List (copies) of the articles, presentations, etc)

- Report on intellectual property rights and exploitation

Beneficiaries, Key Persons and their Role

Coordinating Beneficiary: FORTH- Institute of Computer Science

Overview

The Foundation for Research and Technology - Hellas (FORTH- www.forth.gr), established in 1983, is one of the largest research centers in Greece with well - organized facilities and highly qualified personnel. It functions under the supervision of the General Secretariat for Research and Technology and consists of seven Research Institutes located throughout Greece: Heraklion, Rethymnon, Patras and Ioannina. The Foundation's headquarters are located in Heraklion, Crete. FORTH is one of the top European research centers, thanks to its high impact research and its valuable socioeconomic contribution.

The Laboratory of Computational Medicine (CML) at FORTH-ICS has been engaged in emergency management since the 1990's when the Emergency Response system for Pre-hospital Emergency Management (EKAB) was developed. For more than 15 years now, the paperless information system of the emergency services in Crete is maintained by FORTH. Although the number of emergency episodes is rising, this innovative emergency information system building of GIS technology, novel telemetry methods, and the latest triage protocols, has managed to keep emergency response times at a minimum. FORTH-ICS is committed to the consistent implementation of interoperability standards as the means of improving quality and access to eServices, hosting the W3C office in Greece. The OpenECG network promoting the consistent implementation of ECG standards has more than 1000 members from 65 countries. FORTH-ICS was first engaged with the effective use of ICT in civil protection back in 2005, by supporting the prefecture of Heraklion in organizing a large exercise in Crete, to demonstrate the value of Satellite-enabled applications in the aftermath of an earthquake (6-7 Nov 2007). In a 2-day exercise organized by the prefecture of Heraklion, 20 civil protection organizations and volunteers participated in an exercise on marine pollution that engaged more than 300 volunteers.

From 2009-2011, CMI participated along with Cyprus (Civil Defense), National Secretariat of Civil Protection, and the Red Cross in POSEIDON a pan European civil protection exercise funded by European Commission (Civil Protection) and coordinated by the Regional Government of Crete, on the theme of a disastrous tsunami following an earthquake. CML's specific role in the project was the use of ICT in notifying the public (SMS), triage services using mobile devices connected to the Emergency Services, CC at Civil Protection HQ at the region of Crete, and the local hospital emergency departments. Furthermore, CML is currently working with the Emergency Services (EKAB) and the municipalities to provide proactively additional support to groups with special needs, such as those physically challenges, or with chronic diseases following a disaster. Exercise EU

POSEIDON 2011 took place in October 2011 training more than 400 people in the EU Civil protection mechanism, engaging the local, regional, national procedures and European levels of civil protection.

Relevant Projects

Project SAFE:

Satellites for Epidemiology and Health Early Warning (ESA): The project was funded by European Space Agency (ESA) and was demonstrated by ESA in the European Civil Protection Forum Brussels Nov, 2009. In the frame of this project, the prefecture of Heraklion and FORTH-ICS with participation of all relevant civil protection authorities organized a 2-day readiness exercise (20 participating organizations/300 volunteers) with scenarios involving fire and environmental disaster in the main power-plant of Crete, as well as search and rescue operations in a high-class hotel. The exercise scenarios involve fire & environmental pollution in the largest powerplant in Crete, hotel evacuation, and the outbreak of an epidemic in a settlement of earthquake victims. A short video of the exercise is available at: http://www.esa.int/esaTE/SEM7DK73R8F_index_0.html

References:

- C Chronaki. Epidemic Intelligence: Satellite-Enabled Applications for Health Early Warning Systems, ERCIM news #75, http://ercim-news.ercim.org/content/view/443/655/

- CE Chronaki, et al, Satellite-enabled applications for health early warning in public health after a disaster: experience from a readiness exercise, Proceedings of eChallenges 2008, Stockholm, Oct 21-24, 2008

- CE Chronaki, et al, Satellite-enabled eHealth Applications in Disaster Management: Experience from a Readiness Exercise, Computers in Cardiology 2008, Bologna, Sept 14-19, 2008

Project POSEIDON:

Exercise EU POSEIDON 2011 marked 10 years of the European Civil Protection Mechanism (ECP). It ran for two days in real-time and involved four levels of civil protection (local, regional, national, European). More than 300 participants attended representing fire brigade, Emergency Medical Services (EMS), health authority, port authority, police, municipalities, power plant, volunteers, along with search and rescue teams from Greece (Red Cross), France (PCSF), and Cyprus (Civil Defense). The Exercise Command comprised members of the Regional Directorate of Civil Protection and the General Secretariat of Civil Protection, Hellenic Ministry of Citizen Protection. Observers from country-members of the ECP attended the exercise.

References:

- Evangelia T. Flouri, Costas E. Synolakis, Nikos A. Kampanis and Catherine E. Chronaki. Risk Assessment Study based of the 365AD Earthquake to Drive a Civil Protection Exercise, ERCIM News 81

- Catherine E. Chronaki, Vasilis Kontoyiannis, Panayiotis Argyropaidas, and Dimitris Vourvahakis Innovation in Disaster Management: Report from Exercise EU POSEIDON 2011, ERCIM News 88.

- Catherine E. Chronaki, Vassilis Kontoyiannis, Dimosthenis Panagopoulos, Dimitrios G. Katehakis, Dimitris Vourvahakis, Kyriaki Koutentaki-Mountraki: Interoperability in Disaster Medicine and Emergency Management (Interoperabilidade em Medicina de Desastres e Administração de Emergências), Journal of Health Informatics (official publication of the Brazilian Health Informatics Society), August 3, 2011, pp. 87-99

Brief CV of key personnel

Mrs. Catherine Chronaki

Catherine E. Chronaki (Dipl Comp Eng'88, MSc90) is a Senior Software Engineer at FORTH-ICS since 1992, a major contributor to more than 25 projects in eHealth services, risk assessment and consumer adoption of eHealth services through sustainable business models extending health records to support disease surveillance and emergency services. She was project manager for the ESA Tender SAFE (2006-2008): Satellite for Epidemiology and Health Early Warning. She is currently Project Manager at FORTH for Project Poseidon: Earthquake followed by Tsunami in the Mediterranean Sea (2009-2011) which aims to operationally test the European Civil Protection Mechanism extended with the use of novel ICT concepts in coordination and cooperation based on international standards. Catherine has co-authored 80+ papers and delivered lectures on disaster management/emergency response. Member of IEEE and HL7, she serves as IEEE TITB Associate Editor, sits on the eHealth Governance Initiative (eGHI) PSC and the HL7 International Board, and chairs the HL7 European Foundation TF.

Role

Leader task A: Management and Coordination.

Mr. Vasilis Kontogiannis

Bibliographic note

Vasilis Kontogiannis received his B.Eng. degree in Electronics Engineering from the University of Leeds, U.K. in 1995 with graduate scholarship and his M.Sc. (Eng.) in Radio Communications and High Frequency Engineering from the University of Leeds, U.K. in 1996. In 1999 he joined the Computational Medicine Laboratory (CML) at the Institute of Computer Science of FORTH. He has been working in the field of biomedical engineering

with focus to analysis, design and development of medical information systems and network infrastructure for the implementation of telematics in health.

Participated in several national and EU funded projects in the healthcare domain, contributed in data modeling, integration and design of teleconsultation systems, homecare platforms, telemedicine applications for ambulatory care and emergency management, clinical information systems, evaluation of continuous medical education platforms as well as disaster and emergency management applications for civil protection with the use of satellite, Wi-Fi and mobile communications. Also he was technical manager of SAFE and POSEIDON project demonstration.

Furthermore, he is responsible for database administration issues as DBA of the GR-Hostname National Registry.

Role
Leader Task C: T3: eLearning tools - skills development

Mr. Yannis Karatzanis
Yannis is physicist with experience in GUI design and in development of both web and native applications mostly oriented in the medical field and in education. Analytically in the domain of medical applications he have been involved in the following European projects: Heartfaid. A knowledge based platform of services for supporting medical-clinical management of heart failure within elderly population), Contra Cancrum (Clinically Oriented Translational Cancer Multilevel Modelling project, a composite multilevel platform for simulating malignant tumour development and tumour and normal tissue response to therapeutic modalities and treatment schedules), Tumor (a project that aims at implementing a EU cancer model/data repository, and developing/providing specific tools and methods for the collection, curation, validation and customization of existing EU and US cancer models, by linking the most significant relevant EU VPH projects on cancer modelling -ContraCancrum, ACGT-, and the US project –CviT-), INTEGRATE (which aims to develop innovative infrastructures to enable data and knowledge sharing and to foster large-scale collaboration in biomedical research), Reaction (which aims to develop an integrated ICT platform that supports improved long term management of diabetes based on wearable, continuous blood glucose monitoring sensors and automated closed-loop delivery of insulin). In the education field, Yannis has been for 5 years an active developer and multimedia designer of the Multimedia Lab, in the department of Physics of the University of Crete, where in cooperation with the "Crete University Press", we created interactive lessons of physics (available in CD/DVD and also online) where the pupils could play smart interactive games while simultaneously were learning the laws of physics and were observing their results.

Mr. Panayiotis Argyropaidas

Panagiotis Argyropaidas is a software engineer with FORTH-ICS with extensive experience on the development of web-based database-driven applications. He is responsible for the development and testing of geo-localization applications and customized SMS-based alert services for disaster management used in the POSEIDON project.

Mrs Theano Apostolidi

Theano Apostolidi has joined the ICS-FORTH Computational Medicine Laboratory (CML) since 2007 and has experience in managing and coordinating national and european projects. She is the Programme Manager of 2 Collaborative European projects, ContraCancrum and TUMOR coordinated by CML. She was part of the administrative staff for the POSEIDON project and contributed majorly to the preparation of the POSEIDON exercise.

Role

Leader task G: Task publicity, Awareness, Dissemination, and Liaison

AB1: Civil Defence, Cyprus

Overview

Cyprus Civil Defence (CCD) is the governmental agency in charge of the protection of the people of Cyprus under the auspices of the Ministry of the Interior of the Republic of Cyprus.

It has a long line of experience in *disaster* relief for natural disasters, which occurred on the island of Cyprus such as earthquakes, forest fires, draughts, floods, and severe rainstorms.

Cyprus, through CCD, actively participates in the Community Civil Protection Mechanism and harmonizes, where necessary, national policies and programmes with the Acquis Communautaire. CCD, German Federal Agency for Technical Relief (THW) and Johanniter have established a tradition of cooperation since 2006 by conducting the EU Assessment Mission Courses on Cyprus.

Key Personnel

Mikaella Mala

Mikaella Mala joined Cyprus Civil Defence Department in 2011, as a Civil Defence Officer. She has studied Chemistry in Aristotle University of Thessaloniki and has a Master in Food Chemistry and Technology. She has worked in private and public sector and has experience in laboratory analysis and quality assurance. Mikaella follows PROCIV in Brussels as part of the Cypriot Presidency Group. She has participated in exercises taking place in Cyprus and attended seminars on hazardous materials and risk assessment.

Role:
Mikaella Mala will lead WP F.

Demetris Chistou

Demetris Christou is a graduate of Aristotle University Thessaloniki with degree in Civil Engineering. Furthermore he has a Masters Degree in Civil Engineering from the University of Cyprus. He works in the Ministry of Interior of the Government of Cyprus in the Civil Defence Department. His duties are to make Shelters to be used during war periods, inspection and evaluation of buildings after severe disasters, creating Database and Maps of Civil Defence Shelters using different computer programs and he deals with different Civil Defence issues. Previously he worked in Department of Planning and Housing of the Ministry of Interior of the Cyprus Government. He also has experience in the coordination of civil Engineering Projects and Quantity Surveying.

Panayiotis Liassidis

Mr. Panayiotis Liassides is working for the Cyprus Civil Defence Headquarters with main responsibilities the following: European Union matters, CECIS Administrator for Civil Protection and Marine Pollution, representing the Republic of Cyprus to the Civil Protection Committee of the European Union, participates to EU Training Coordinators and Training Centres meetings, he is the Head of the TAST Module on behalf of Cyprus Civil Defence which registered in CECIS jointly with Johanniter, Telecommunications, Planning, Training, etc.

Ongoing EU training: EU Assessment Mission Course (AMC)

Previous EU Projects:

- EUTAC TAST Module, http://www.eutac-project.eu/

- Eselfhelp Questcity game, www.questcity.eu

- EU Poseidon Exercise, http://84.205.229.30/poseidon/

Missions Abroad:

- Head of 2nd mission for the fire fighting of the forest fires in Greece, August 2009

- Missions in Cyprus: - LEMA Liaison Officer to the EU Civil Protection Assessment Team, Vassilikos Power Plant, July 2011

- support to the refugees during the Lebanon Crisis, July-August 2006 http://www.sigmatv.com/stigmeszois/playlist

Role

Panayiotis Liassides will be the Leader of Task D.

AB2   TEI Crete, Greece

Overview

TEI Crete is a Public Educational Institution. It is part of the Hellenic Tertiary Education since 1983 and one of the 40 Higher Education establishments as of 2011. Its Mission includes Undergraduate Education consisting of 18 First Degree Courses, Postgraduate Education, research and direct contribution to regional and broader development, through lifelong learning, high profile technological and consultancy services to the industry, and technology transfer. TEI Crete, with its *ca.* 460 highly qualified teaching staff and fully adequate technical and clerical staff, provides high quality education (documented by all external evaluators) to more than 14,600 students. Education is delivered at the base campus in Heraklion city and at 5 branches in towns of Crete (Chania, Rethymnon, Aghios Nicolaos, Ierapetra and Siteia). Degree Courses comprise Engineering and Informatics, Business Administration and Economics, Agriculture, Health and Welfare. The Institute and Schools administration concentrate of the efficacy of the study programmes, learning outcomes, publicity of the degrees, successful graduate placements, the top quality student halls and the 6 restaurants of the Institute. Local communities fully support the branches of the Institute and the resident students. There are limitless opportunities for active student participation in research and development projects (TEI Crete has the top success rate and recognition in research among its peers), for student exchanges with over 100 foreign universities and for paid work at the Institute laboratories. Graduates can also continue with Postgraduate Studies at the Institute or at cooperating Universities in Greece and abroad, with the active support of TEI Crete professors. Spiritual, artistic and entertainment activities in and around the Institute are varied and shared by students and staff, with the financial support of TEI Crete. Personal care and advice is provided to new incoming students by the International Office and skilled staff at the Schools.

The beginning of the academic year 1999 – 2000 marked the the operation of the new Department of Natural Resources and Environment at the Branch of Chania of the TEI of Crete with an organised programme of degree studies, which has been designed in accordance with modern understanding and basic aims being the study, the design, the development and the valorization of technologies which are currently being used for the correct management of Natural Resources. In particular the graduates of the Department will be able to demonstrate a complete training in the technologies which are related with the management of Renewable Energy Resources, of Water Resources and of the Environment. Over the last years the researchers of the Department of Natural Resources and Environment have participated in a variety of research projects (https://www.chania.teicrete.gr/department-of-natural-resources-a-enviroment-en/organization-en).

Key Personnel

Prof. Eleni Kokinou

Dr. Eleni Kokinou received the B.Sc., M.Sc. and Ph.D. degrees in Earth Sciences from the Aristotelian University of Thessaloniki and the Technical University of Crete in 1993, 1998 and 2002, respectively. She is Assistant Professor in the Department of Natural Resources and Environment, Technological Educational Institute of Crete. She is the author in more than 55 articles in international journals and conferences with more than 100 citations. Dr. Kokinou has been received several awards and prizes, including State Scolarships Foundation (IKY) for the years 1988, 1989, 1990 and Foundation for Research and Technology (FORTH) for the years 2003 and 2004. Her research interests include Reflection Seismology – Deep crustal studies, Geophysical Prospection of Archaeological Sites, Geophysical Signal Processing, Geophysical Mapping, Algorithm Development, Geological and Environmental Studies.

Role:

Prof. E. Kokinou is leader of Task B

Dr. Costas Panagiotakis

Dr. Costas Panagiotakis received the B.Sc., M.Sc. and Ph.D. degrees in Computer Science from University of Crete in 2001, 2003 and 2007, respectively. He is Assistant Professor in the Dept. of Commerce and Marketing, Technological Educational Institute (TEI) of Crete. Moreover, he is Visiting Professor in Computer Science Dept., University of Crete. In 1999 he joined the Multimedia Informatics Laboratory (Supervisor: Prof. G. Tziritas), University of Crete and he is member of the e-Business Intelligence Lab. He has participated in several EU and national funded research projects. He is the author of one book (monograph) in English and more than 40 articles in international journals and conferences with more than 250 citations. He has been published articles in top international scientific journals like IEEE Trans. on Multimedia, IEEE Trans. on Image Processing, IEEE Trans. on Geoscience and Remote Sensing, IEEE Trans. on Circuits and Systems for Video Technology, IEEE Trans. on Knowledge and Data Engineering, Computational Geometry: Theory and Applications. Dr. Costas Panagiotakis is reviewer in more than 10 international scientific journals and conferences of IEEE, Elsevier and Springer and editor in a special issue of international scientific journal "Parallel Processing Letters". Dr. Panagiotakis has been received several international and national awards and prizes, including Sponsor Award on International Conference AMDO (2006), Cor Baayen Award finalist (2009) and Best Paper Award on International Conference on Future Information (2011). His research interests include signal processing, image and video analysis, multimedia, computer networks and pattern recognition.

Role:

Mrs. Kokinou will be leading Task B coordinating the participation of other partners. She will also participating in the NEREIDs steering committee and project management board.

HCMR – Hellenic Centre for Marine Research, Gr (Subcontactor to AB2)

The Hellenic Centre for Marine Research (HCMR) is a governmental research organization operating under the auspices of the General Secretariat of Research and Technology (Ministry of Education). It has the mandate to promote basic research in all fields of aquatic environment and to deliver comprehensive scientific and technical support to the public. The HCMR personnel include 217 scientists and 45 technicians while the administrative and auxiliary personnel numbers 43 and 115 persons respectively. HCMR operates the 62m R/V Aegaeo, the 23m R/V Filia and the manned submersible THETIS as well as two aquariums in Crete and Rhode Islands. Within the last 20 years HCMR has contributed to a large number of international research projects for the Mediterranean and the Black Seas. It also participates in large international initiatives such as GLOBEC, CLIVAR and GOOS and supports the efforts of IOC. In the field of operational oceanography HCMR is an active member of EuroGOOS & MedGOOS and contributes by (a) developing a national monitoring / forecasting capacity through the POSEIDON programme, and (b) participating in various EC and ESA funded research projects (MFSPP, MFSTEP, MERSEA_IP, MARCOAST, ECOOP, MyOceanI&II) for the development of the European capacity in Operational Oceanography under the GMES and GEOSS umbrella. In the last five years HCMR has developed and implemented an oil spill forecasting system which provides forecast information on demand and it aims to support the Greek national authorities to handle more efficiently the marine oil spill incidents when they occur. The system was initially developed for the needs of POSEIDON operational oceanography system and it was further developed and upgraded during the ESA's projects ROSES and MARCOAST. The HCMR oil spill modelling system was the forecasting component of MARCOAST integrated oil spill service which was operationally provided in the Aegean Sea for three years (2006-2008). This later service was an integration of the oil spill detection processes that was applied on satellite based SAR images together with the forecast of oil spill evolution which was provided by the HCMR oil spill system.

Short CV of L. Perivoliotis

B.Sc in Physics (1987) University of Athens; M.Sc. in Physical Oceanography (1990) from the same University. Research Associate in the Physical Oceanography group of Athens University (1990-1998). Since 1999 he is a research scientist in the Hellenic Centre for Marine Research, member of Operational Oceanography team (POSEIDON System) being responsible for the operational data post processing and numerical forecasting as well as the development of end user applications. He participated in several EU funded projects in the field of Operational Oceanography (MyOcean I, MyOcean II, MFS, MERSEA-IP, ECOOP, etc.). PI in the ESA/GSE funded projects ROSES and MARCOAST in which he was

responsible for the oil-spill forecasting service. Since 2010 he is leading the Mediterranean Portal for real-time data where data from all the operational platforms (buoys, profilers, drifters, vessels) in the Mediterranean are being collected, processed and disseminated.

The engagement of Mr. Perivoliotis will be subcontracted by AB2 through ELKETHE.

Role of HCMR in the project

HCMR is going to provide the necessary atmospheric, hydrodynamic and sea state fields for the oil spill modelling scenarios. The fields will be extracted, averaged and adjusted to the selected geographical regions from the POSEIDON system's data bank (http://www.poseidon.hcmr.gr) which contains the forecasting fields that are produced in daily basis by the system for since 2007. The use of such high-resolution data is expected to provide more reliable results regarding the oil spill dispersion during different time periods throughout the year.

AB3   Civil Protection, Decentralized Administration of Crete, Gr

Overview

The Decentralized administration of Crete is one of the seven (7) Greek Regional Administrations that comprise the decentralized units of central government. Their main role is to implement the central state policy at the regional level. The decentralized administration of Crete is divided in three general directorates. The main aim of directorate of civil protection of Crete is the protection of life, health and property of the citizens, the protection of the environment from natural, technological and other disasters and the minimisation of these disasters' impact. In particular, the directorate of civil protection of Crete is responsible at the regional scale for: the coordination of all regional units (Army, Public Security Forces and other bodies and - in case of emergency - of all the relevant Public Services), the confrontation of natural and technological disasters; the technical support of the "regional decision body" in the case of a major disaster; and the planning to confront any natural or human induced risk.

Relevant Projects

POSEIDON (Earthquake followed by Tsunami in Mediterranean Sea DG ENV.A3 Grant No 070401/2009/534369/SUB/A3), co-funded by the European Union, aiming to prepare the Civil Protection in dealing with a devastating earthquake tsunami, through the cooperation of civil protection agencies at local, regional, national and European level. The mechanisms of Civil Protection of Cyprus and France were involved as part of this project, as the cooperation was evaluated through the European Civil Protection Mechanism. The project was coordinated by the Decentralized Administration of Crete - Civil Protection and participating partners were the General Secretariat for Civil Protection, FORTH, the Civil Defence of Cyprus, Telemedicine Services and Civil Protection without Borders in France, and the Hellenic Red Cross - Address Samaritan House, Rescuers and Lifeguards. Observers from 14 European countries belonging to the European Civil Protection Mechanism were involved. The program was executed from June 2009 to February 2012. A Table Top exercise was conducted on the 30th May 2011, a Command Post exercise on 4th October and a simulation Field exercise on the 24th and 25th October 2011.

MedRisk was a project under the Interreg III programme. (2005-2007). Its objectives were:

- Creation of an upgraded and networked Operational Centre of Management of Crises, Disasters and Extraordinary Incidents with similar centers in the Mediterranean.

- Increase of the speed of response of the wider governmental mechanism that is involved in similar cases

- Analysis and better planning of Civil Protection at every level of administrative structure in order to increase the citizens' feeling of security

- Interconnection and Joint policy of Operational Centres in different countries for crises management
- Creation of scenarios and better planning of Civil Protection at every level of administrative structure
- Information and awareness of the public.

Key personel

Dr. Marinos KRITSOTAKIS Director of the Civil Protection

Dr. Marinos KRITSOTAKIS (BSc in Geology, MSc in Engineering Geology, PhD in Environmental Engineering) is the Director of the Directorate of Civil Protection (2010-2012). Dr. Kritsotakis have experience as Consultant in research project for ground water exploitation and construction of water wells and also as Consultant in environmental studies (1988-1997). He was the Head of the section of Water Resources Planning and Protection of the Region of Crete (1997-2010). In particular, Supervisor in the field of the research of water resources management at regional level and for environmental impacts; Responsible Officer of Decision Support System for the management of water and for the implementation of the following models: water demand- supply nodal model (RIBASIM), Groundwater model (GMS) and watershed model (SACRAMENTO); Responsible Officer for the telemetric monitoring system for the ground water parameters. Dr. Kritsotakis participated in the following EU programs: TERA- DIAS, INTERISK, MEDIS, CRINO-BEWARE, STRiM, TWINBASIN, HYDRATE, Agricultural Utilization Of The Tertiary Treated Wastewater As An Alternative Water Resource, POSEIDON . Languages Greek, English. His Research area of interest is the Water management, Hydrology, conceptual models, environmental studies, Risk analysis and risk management. He is Member of Geotechical Chamber of Greece, Hellenic Hydrological - Geological Society, International Association of Hydrogeologist.

Mr. Michalis GORGOULIS, Head of the section B'

Michalis Gorgoulis is a Mechanical Engineer (Five year studies), civil servant, supervisor of the disaster confrontation and rehabilitation department of the Civil Protection Directorate of Decentralised Administration of Crete. His main activities also include participation in several European projects in the fields of Civil Protection and Energy. He has previous considerable experience in supervising building, wind farm and solar installations and has elaborated relevant studies and publications working as a researcher at the National Technical University of Athens and the private sector. He has achieved a C2 and B2 level in English and French respectively. He is a member of the Technical Chamber of Greece and of Hellenic Association of Mechanical Engineers.

Mrs. Kyriaki Koutentaki, Head of the section A'

Mrs Kyriaki Koutentaki is a geologist supervisor of the planning of disaster of the Civil Protection Directorate of Decentralised Administration of Crete. She has been with the

region of Crete, Directorate of civil protection since May 2004, and was the director of Civil Protection of the region of Crete 2006- 2010. She has participated in the Capital Bleu, NautisMed, and CultourMed Projects in the region of Crete, and she was responsible for the project MedRisk and she was the project coordinator of POSEIDON.

AB4   Department of Fisheries and Marine Research, Ministry of Agriculture, Natural Resources, and Environment, Cyprus

Overview

After Cyprus became an Independent Republic in 1960, the new State included fisheries development in the development policies of the governments. As a result the Department of Fisheries was founded in 1964 within the Ministry of Agriculture and Natural Resources; its mandate was the development of fisheries and the rational management of marine resources in general.

In the year 2000, the Department was renamed to Department of Fisheries and Marine Research (DFMR) because of the significant expansion of scientific research in its various aspects of activities to broader scopes and objectives. Over the years, the Department of Fisheries and Marine Research developed activities in multidisciplinary fields, concerning the sustainable use of marine resources, the development and sound management of fisheries and aquaculture, the marine ecology, the protection of endangered species and habitats, physical and chemical oceanography, and the prevention and combat of marine pollution. Furthermore, within the framework of the fisheries development, the Department promotes supporting programmes to the fishermen including, inter alia, the construction of fishing shelters. It is also responsible for the enforcement of the relative Legislation.

Relevant projects

No	Pollution incident
1	Operation for combating pollution from a burning tanker "EFXINOS PONTOS" 01/05 – 02/05/1999
2	Operation for combating pollution in the Power Station of "Moni" after the fuel leakages 27/06 – 28/06/1999
3	Operation for combating after sinking of boat with migrants in the area of Coral Bay Paphos 14/09/2000
4	Operation of combating pollution in the sea area of Limassol, caused by the boat "GASAK-STAR" 11/03/2002
5	Operation for combating pollution in the Bay of Limassol, caused by the boat "ALEXANDER HAVEN" 27/03/2002
6	Operation for combating pollution caused by the boat "M/V PARAGUAY" 22/09/2002
7	Operation for combating pollution caused by the boat "M/V NOSTOS" 01/10/2002

8	Operation for combating pollution in the sea area of Larnaka caused by the boat "ΠΕΤΡΟΛΙΝΑ" 05/09/2003
9	Operation for combating pollution in the sea area of Limassol New Port, caused by the boat "M/V BLUE SPIRIT" 25/05/2012
10	At least three more recent operations, where they have not been registered formally, and they are in progress with successful results in the sea area of Cyprus

Key Personnel

Marinos Ioannou - Short CV

Mr. Marions Ioamnou Engineer CN, is active in that Nautical Service of the Department of Fisheries and Marine Research since 1989. From 2005 is his the supervisor of the Nautical Service, which the main sector f the Ministry of Agriculture, Nautical Resources, and Environment in Cyprus combating marine pollution. Moreover, he is the coordinator and leader of the department ships, as well as the supervision of the activities that relate to all relevant marine programs of the department.

AB5   Cardiff University, UK

Overview

The 3D Seismic Lab comprises a new facility for 3D seismic interpretation and visualisation where 3D seismic is seen as something of a 'Geological Hubble' that has a major impact on our understanding of upper crustal dynamics. The laboratory houses 25 workstations and operates multiple subsurface interpretation software suites. The laboratory already supports the research activities of 15 PhD students and 3 post-doctoral research assistants. A vast quantity of 3D seismic and well data has been donated from over 15 oil companies for use at Cardiff, and research is currently under way on many different aspects of deformational and depositional processes in sedimentary basins, in collaboration with staff at Cardiff and associated universities. Much of this work is fundamental in nature, but has a close link with applied geology and geophysics through support by the Petroleum Industry. The 3D Seismic Lab has a long history of past contact with the Industry, and aims at developing projects of use to oil, environmental and mining companies. The group generally combines 3D Seismic data with field information from regions as different as Utah, New Zealand, Greece, Mexico, Alps and the Pyrenees, where classic arrays of geological structures and depositional facies types are observed in almost perfectly exposed outcrops. Other research themes that are actively being pursued using the medium of 3D seismic data are soft-sediment deformation of submarine fan sandstones, the relationships between submarine fans and contourites, and the very interesting problem of how large igneous bodies are intruded into sedimentary basins.

Interpretation software available at Cardiff includes:

- - Schlumberger IESX for seismic interpretation of 2D/3D seismic data,
- - CGG-Veritas Hampson-Russell software for seismic-borehole correlations and petrophysical analyses,
- - ARC-GIS and ARC-VIEW tools for GIS-based work,
- - Kingdom Suite, for interpretation of 2D/3D seismic, geophysical and marine geology surveys
- - PCI Geomatics 10 for the quantitative analysis of textural features in image data.
- - Hampson-Russell petrophysical software for seismic-borehole correlations and seismic inversion.

Thus, comprehensive software packages specifically designed for attribute rock-physics analyses and quantitative seismic interpretation are available in the 3D Seismic Lab, together with a established group of geologists, Ph.D. and MESci students working in themes as varied as thrust-architecture, mud volcanoes, salt tectonics, strike-slip fault systems and depositional vs. seismic facies analyses, all with the aim of evaluating geological risk during hydrocarbon exploration and production.

The Principal Investigator in the project, Dr. Tiago Alves, is a Lecturer at Cardiff University, co-responsible for the 3D Seismic Lab, Cardiff University. After completing his Ph.D. in geology at the University of Manchester, he worked in Portugal and then Greece under the umbrella of European Union projects (EURODOM and HERMES) dedicated to the study of continental margins. He is particularly involved in risk analyses of hydrocarbon systems using novel statistical methods, petrophysical, and 3-D seismic data.

Key Personnel

Tiago Alves

Tiago Alves is a 35-year-old researcher with 7 years of post-doctoral experience in basin analysis, marine geology, seismic stratigraphy, including a) hydrocarbon prospect evaluation on the North and South Atlantic margins (e.g. Portugal, Brazil, Angola, Nigeria, Namibia, Canada, and North Sea), b) sedimentary facies analysis (offshore- and fieldwork-based) and, c) combined outcrop-geophysical studies on passive and tectonically-active continental margins. His experience encompasses work in Academia, Governmental Research Institutions within the European Union, and extensive collaboration with Industry in several research projects. In total, Tiago has so far published 23 papers on distinct aspects of the geology of continental margins. With his work, he has triggered the interest of Industry in hydrocarbon exploration offshore west Iberia. In the subject of fluid flow on active continental margins, the main focus of this proposal, he has produced (as first author) papers addressing major themes such as:

- Structural and seismic decoupling on the Southern Cretan Margin (GSA Bulletin, 2012);
- The effect of surface propagating faults in inverted hydrocarbon-rich basins (Earth and Planetary Science Letters 2012);
- The existence of widespread collapse of seafloor strata in parts of continental margins (Marine Geology, 2011).

In parallel, in the past three years he has concentrated his efforts in developing a new research theme at the 3D Seismic Lab (Cardiff University) devoted to the petrophysical analysis of reservoir and seal rocks in hydrocarbon-rich sedimentary basins.

AB6   Hellenic Red Cross – Rescue and Samaritans Corp Administration

Overview

The mission of Volunteer Samaritan and Rescuer Corps of the Hellenic Red Cross (HRC-VSRC) is to train and provide First Aid Services, Rescue Services and Lifeguard Services.

The HRC–VSRC has implemented civil protection modules according to standards dictated by the E.U. civil protection mechanism for Civil Protection Organizations and participates in Search and Rescue operations and in confrontation of disasters, where, when, and as needed.

The HRC–VSRC has 4.250 active Volunteers in First Aid, Rescue, Lifeguarding, Instructors and scientific collaborators in every region of Greece.

The Volunteer Samaritan, Volunteer Lifeguard and Volunteer Rescuer educational system is supervised by the German Red Cross. All the First Aid and Rescue Instructors are certified by the German Red Cross.

The HRC–VSRC is recognized by the Hellenic General Secretary of Civil Protection, and is a Full Member of the International Lifesaving Federation, and the National Commission of CPR, and the Hellenic Agency for the Protection of Nature and Sea Environment, etc

The HRC–VSRC is operational 24 hours per day, 365 days per year. It interferes in Greece and abroad.

In the frame of project "Poseidon", HRC-VSRC will deploy civil modules to support the Greek Emergency Services, which are overwhelmed by the size and the intensity of the disaster. It will also collaborate with Volunteer Organizations from France, Germany and Italy building ties for improved collaboration at European level.

Relevant projects

AB6 has participated in the POSEIDON project with AB1, and CB.

Key Personnel

George-Yioannis Tzikas

TZIKAS GEORGIOS – IOANNIS is a Rescuer of the Hellenic Red Cross since 2006 and a First Aid and CPR Instructor since 2001. He is Lifeguard, and International Lifesaving Instructor since 2001 and Chief of 'Heraklion' Volunteer Samaritans and Rescuers Corps since 2007. He is a certified International Lifesaving Europe Risk Assessment Tutor since 2008

Member of the International Lifesaving Europe Rescue Commission sine 2006

AB7 Oceanography Center, University of Cyprus (OC-UCY), Cyprus

Overview

The Oceanography Centre at the University of Cyprus (OC-UCY) activities include numerical models (flow, oil spill and general pollutant dispersion and sea state predictions), satellite remote sensing, in-situ monitoring and operational oceanography. OC-UCY is a member in EuroGOOS, MedGOOS, MOON, CIESM, and Marine Board of ESF. OC-UCY has been an active partner in many EU-funded projects related to the ocean forecasts and oil spill predictions in the European seas, such as MyOCEAN, ECOOP, MERSEA, MFSTEP, MEDESS4MS, etc. OC-UCY has developed and operates CYCOFOS, the Cyprus Coastal Ocean Forecasting and Observing System, which provides operationally, forecasts for sea currents, sea temperature, waves and oil slicks detection and predictions. Moreover, the MEDSLIK oil spill model was developed and operated by OC-UCY in the Mediterranean, the Black and Baltic seas. OC-UCY assisted the local, regional and EU response agencies and the decision makers during several oil pollution crisis by providing predictions on the movement and the weathering of the oil spilled, as for example during the biggest so far oil spill pollution crisis, that of Lebanon in summer 2006. Moreover, OC-UCY provides regularly oil spill predictions to response agencies, upon their request or following EMSA or and REMPEC warning reports.

Key persons involved:

Dr George Zodiatis

Dr George Zodiatis is the principal investigator from OC-UCY in this proposal. He is the Vice Director of the OC-UCY. He has more than 25 years of experience in oceanography, including ocean forecasts, oil spills detection and prediction. He has been involved in more than 20 research projects funded by the EU, the RPF and other organizations. He is coordinating the work of a team participating in several EU projects related to operational oceanography and oil spill predictions, such as MyOCEAN, ECOOP, MERSEA, MFSTEP, MEDESS4MS. He has published more than 90 referred scientific papers and proceedings.

Role

Prof. Zodiatis will be the leader of Task E

Professor Robin Lardner

Professor Robin Lardner holds a Ph.D. and Sc.D. in Applied Mathematics and Theoretical Physics from Cambridge University. He is emeritus Professor of Applied Mathematics, Simon Fraser University, Canada. He spent nine years at KFUPM Research Institute in Dhahran working mostly on ocean modelling and oil spill models. At present, he is an external collaborator at the OC-UCY. The last 10 years he active participated in EU research projects promoting the operational oceanographic forecasts on flow and oil spill

modelling in the Mediterranean Sea, such as MyOCEAN, ECOOP, MERSEA, MFSTEP, MEDESS4MS.

Mr Andreas Nicolaidis

Mr. Andreas Nicolaidis is currently a researcher at the OC-UCY with more than twenty years experience in marine and computer sciences as a former civil servant of the Hellenic Navy Hydrographic Service. He holds a Master of Science in Coastal Management, specialized in Physical and Operational Oceanography. He is curently participating in projects related to ocean forecasts, oil spill monitoring and predictions, such as PREMARPOL, MyOCEAN, MEDESS4MS

Mr. Stavros Stylianou

Mr. Stylianou Stavros got his BSc degree in Computer Engineering and Sciences (2006) in Athens. He is working at OC-UCY from July 2009 since today. The position held is IT support & Programming and he has developed many applications related to the operational functionality of the CYCOFOS ocean forecasts and of the MEDSLIK oil spill reductio system.

Progessor Georgios Georgiou

- Professor Georgios Georgiou has 22 years of experience in numerical analysis and computational fluid dynamics. He has been involved in a number of EU projects related to operational forecasts and oil spill predictions, such as MFSTEP, ECOOP, MyOCEAN, MEDESS4MS. He is the Director of the OC-UCY . He has published more than a 120 peer reviewed publications and abstracts and a fluid mechanics book and edited four proceedings volumes.

AB8 Ubilabs, Germany

Overview

Ubilabs was founded in Hamburg in the year of 2007. The current 16 employees carry out custom design and development work for clients to a high degree of satisfaction. Ubilabs also develops in-house products such as "Ubilocal" with great success. The highly productive team of software engineers, concept-developers, project managers, experts in marketing and graphic designers takes on every challenge the digital information age has to offer. Ubilabs is specialized in location-based-services and Google Maps integration. Ubilabs is also official Google Maps Enterprise partner since 2010. Two of the developers were awarded certifications as Qualified Google Maps API Developers.

Relevant Projects

Questcity

QuestCity is an online game for children from the age of 9-16.QuestCity was co-finaced by the European Commission in the context of the project "e-self help". In the game the payer has to face several emergency situations and solve them as good as possible. The basic idea is to instil both a sense of forward-thinking behavior and foresight. Meaning, the player can relate to the given topic and apply what was learned in real life. To support the learning effect an innovation was integrated into the game. The player is now accompanied by five different characters. The characters lead through the situations and provide a better orientation within the game content.

Key Personnel

Jens Wille, *1971,

Jens Wille is Dipl. Ing, managing partner and founder of Ubilabs. He is project coordinator at Ubilabs for the QuestCity Project.

Friederike Rudelbach, *1986,

F. Rudelbach is Dipl. Designer, Concept and Projectmanagement at Ubilabs since 2010. He is Project mangager at QuestCity

Klaus Trainer, *1985

Klaus Trainer holds B.Sc. in Computer Science. He is backend Developer at Ubilabs for the QuestCity Project.

Blake Simpson, *1990

Blake Simpson holds B.Sc. (Hons) in Web Design and Development. He is Frontend Developer at Ubilabs for the QuestCity Project.

Johanniter-Unfall-Hilfe e.V. (Johanniter) [Subcontactor to AB8]

Is a German non-governmental organization dedicated to excellence in the fields of ambulance service, civil protection and disaster relief. With its 11,000 full-time and

22,000 voluntary staff, Johanniter is one of four organizations forming the backbone of the German ambulance and medical civil protection system. Johanniter also works in the international arena, providing assistance in the realms of disaster relief, medical aid and disaster preparedness.

Its experience and active involvement in the EU Civil Protection Mechanism will be highly beneficial in the development of the project. Experiences and best practices from its previous and current EU projects (EUTAC "European Technical Assistance Cooperation"; EURAMET "European Aerial Medical Evacuation Team"; EURACARE "European Assistance Team for Citizens in Areas of Evacuation; E-Self-Help where the browser-based serious-social game "QuestCity" for youngsters was developed) will be transferred and adapted to the thematic context.

Harm Bastian Harms

Name: Harm Bastian Harms Position/ title: Head of Unit "International Projects and Cooperation" (IPC)	Date of Birth: 05.09.1954 Nationality: German
Relevant professional experience (post held, organisation, main function(s), year)	
2011-2012 (current): Johanniter-Unfall-Hilfe e.V. Head Quarters, Head of Unit "International Projects and Cooperation". Project manager of EU-funded projects GEO-PICTURES, EUTAC, EURAMET, EURACARE and e-self-help 1993- 2011: Johanniter-Unfall-Hilfe e.V. Regional Association Hamburg, Head of Unit "International Projects and Cooperation" Project manager of EU-funded projects GEO-PICTURES, EUTAC, EURAMET, EURACARE and e-self-help 1992 Johanniter-Unfall-Hilfe e.V. Regional Association Hamburg Coordinator of humanitarian assistance (voluntary) 1990-92 HABA Computer AG Member of executive board. Finance, management Organization Personnel management Marketing 1982-90 HABA-Technik Harm Bastian Harms KG; Director, Finance management, Organization, Personnel management, Marketing	
Relevant degree(s) (subject, school/university, year)	
1976-79 Business Administration at University for Economics and Politics, Hamburg 1974-76 Businessman in a publishing company Axel Springer Verlag AG, Hamburg	

List of relevant publications / research activity / projects (include full reference)
- Numerous publicationsin field of Civil Protection and Disaster Management, especially within the EU Civil Protection Mechanism
Other relevant information
- Coordination of operations in the field of humanitarian assistance and international disaster relief
- Logistics officer
- Communications officer
- Liaison officer in the field of humanitarian assistance and international disaster relief
- Head of mission in the field of international disaster relief
- Organization of advanced training in international disaster relief,
- Expert and advisor for mission related satellite communication systems
- Dep. Course director of EU Assessment Mission Courses in Cyprus
- Lecturer in EU Civil Protection training courses and United Nations Staff Officers courses
Language skills: German (mother tongue) English (fluent), Russian (basic)

AB9   National Emergency Medical Services - Crete

Overview

The National Emergency Medical Services (EMS) was established as a public entity in 1985 (N.1579/85) under the auspices of the Ministry of Health and Social Solidarity. The mission of EMS is to coordinate the provision of medical care in emergency situation, and in so needed transfer patients to healthcare facilities. It is the only official state body in Greece, to provide Emergency services, Prehospital Medicine and Nursing Care. EMS all develops and proposes programs in the field of Emergency Medical Response, Prehospital Emergency Medicine and Nursing Care. NEMS is also the only official state body in Greece entrusted with the management and massive casualties in the development of a Special Unit for Disaster Medicine (SUDK). EMS-Crete will be EMS department participating in the NEREIDs proposal.

EMS-Crete has established for several Professional Training Center for Emergency Medicine, which so far has trained more than 2000 rescuers. EMS-Crete will use NEREIDs to reach out to a larger group of people using advanced training methods to facilitate knowledge retention and skills development.

Relevant projects

Medical Emergency services: FORTH-ICS designed, developed and currently maintains the Information System of the emergency services in Crete, since 1997. The integrated system includes an episode database, ambulance location-based services (GIS), and decision support (patient telemonitoring as well as resource management).

References:

- D. Vourvahakis, et al, "Traffic Accidents in Crete (1996-2006): the role of EKAB-Crete" in 15th World congress on Disaster and emergency medicine, Amsterdam, May 13-16, 2007 http://www.wcdem2007.org/

Key Personnel

D. Vourvahakis, Director EMS-Crete

Dr Vourvahakis is specialized anesthesiologist, Director of EMS-Crete and Director of Prehospital Trauma Life Support (PHTLS) in Crete. Since the 1990's Dr Vourvahakis has been instrumental in the promotion of information and communication technology in Pre-hospital Emergency Management and Disaster Medicine, leading the roll-out of the EMS System that is now fully paperless. He has been engaged in training, establishing the Vocational Training Institute for Prehospital Emergency Management. In 2005, he also organized the first department for disaster medicine.

Support Letters

Ministry of energy in Cyprus (resp for relevant oil and gas exploration activities)

May 31, 2012

Cyprus Civil Defence
NEREIDs Program
P.O.Box 23830, 1686 Nicosia, Cyprus

It is my pleasure to write a letter in support of the proposal "NEREIDs" being submitted to the European Commission Directorate General for Humanitarian Aid and Civil Protection Echo Program. The NEREIDs proposal aims to strengthen civil protection and marine pollution cooperation among Greece and Cyprus, building on current best practices, creating an incident database of events and eLearning material to support professionals and volunteers. Oil spills produced from explosions on the oil and gas production platforms (Piper Alpha, 1978; Montara, 2009 and the BP Deepwater Horizon spill, 2010) or sea accidents of tankers comprise a major environmental and financial threat. We strongly believe that our experience in hydrocarbon exploration and exploitation will be very useful for the educational purposes of the "NEREIDs" proposal.

Best of luck with your grant application

Sincerely,

Solon Kassinis
Director
Energy Service
Ministry of Commerce and Industry and Tourism
Nicosia Cyprus

DGV in the Netherlands (responsible for the preparation of the HNS guidelines)

5/30/12   Gmail - mail of support

Gmail
byGoogle

Catherine Chronaki <chronaki@gmail.com>

mail of support

Christiaans, Ronald <Ronald.Christiaans@dgv.minvenj.nl>   Wed, May 30, 2012 at 5:05 PM
To: Catherine Chronaki <chronaki@gmail.com>
Cc: "Schreurs, Herman" <Herman.Schreurs@dgv.minvenj.nl>

Dear Mrs. Chronaki,

With pleasure I have been reading all documents regarding the NEREID project which is being submitted to the European Commission Directorate General for Humanitarian Aid and Civil Protection Echo Program. The NEREIDs proposal aims to strengthen civil protection and marine pollution cooperation among Greece and Cyprus, building on current best practices and standards from IMO addressing Host Nation Support.

Moreover, NEREIDS aims at creating an incident database of pollution events as well as e-Learning material and innovative training tools to support professionals and volunteers. Oil spills produced from explosions on the oil and gas production platforms (Piper Alpha, 1978; Montara, 2009 and the BP Deepwater Horizon spill, 2010) or sea accidents of tankers comprise a major environmental and financial threat.

We are not able to be actively involved in the project or to serve on the advisory board of NEREIDs should it be funded. But the National Operations Centre of The Netherlands is willing to play an advisory role on the topic of Host Nation Support. We are willing to share our experiences we have gained during the process of writing a guideline on Host Nation Support.

If we receive a request from NEREID, we will decide at that moment what our contribution can and will be.

Our contact person will be:
Bc. Herman Schreurs MSHE
Herman.Schreurs@dgv.minvenj.nl
Tel: +31 6 10 88 70 70

Best of luck with your grant application
Sincerely,

Met vriendelijke groet,
With kind regards,

R. (Ronald) Christiaans

Senior adviseur opleiden, trainen en oefenen
Senior advisor training
....
Landelijk Operationeel Coördinatie Centrum (LOCC)
National Operations Centre

Ministerie van Veiligheid en Justitie
Ministry of security and Justice

Adres/*visits*: KLPD/LOCC, Hoofdstraat 54 | 3972 LB | Driebergen, *The Netherlands*
Postadres/*P.O. Box*: KLPD/LOCC, Postbus 100 | 3970 AC | Driebergen, *The Netherlands*
....
T: +31(0)343536700
F: +31(0)343536750
M: +31(0)653510693
E: ronald.christiaans@dgv.minvenj.nl

https://mail.google.com/mail/?ui=2&ik=ed93d565fe&view=pt&search=inbox&msg=1379e10e002d35ce   1/2

Hellenic institute of hydrocarbons

HELLINHY

43 Mitropolis Street
Marousi 151 24
Commercial Center Metropolis
tel: 210 61 43006
e-mail elliny@elliny.gr
www.elliny.gr

HELLENIC INSTITUTE
OF HYDROCARBONS

Athens, 30 May 2012

To: Ass. Professor Kokkinou Eleni
NEREIDs Program
Dep. Of Natural Resources and Environment
3 Romanou, Halepa, 73133, Chania, Crete

Subject: NEREIDs Program

It's my pleasure writing a letter in support of the proposal "NEREIDs" being submitted to the European Directorate General for Humanitarian Aid and Civil Protection Echo Program.

The NEREIDs proposal aims to strengthen civil protection and marine pollution cooperation among Greece and Cyprus, building on current best practices, creating an incident database of events and eLearning material to support professionals and volunteers.

Oil spills produced from explosions on the oil and gas production platforms (Piper Alpha, 1978; Montana, 2009 and the BP Deepwater Horizon spill, 2010) or sea accidents of tankers, comprise a major environmental and financial threat.

Our Institute includes mainly experts scientists and engineers in oil and gas exploration and production. So we believe that our experience it will be very useful for the educational purposes of the "NEREIDs" proposal.

Best of luck

Sincerely yours,

President

Dr. Vasilios Karkoulias

Cyprus Marine Environment Protection Association

CYPRUS MARINE ENVIRONMENT PROTECTION ASSOCIATION

A Charitable Institution Under the Cyprus Law

CYMEPA
Οι φίλοι της **ΘΑΛΑΣΣΑΣ**

CYMEPA HOUSE, Irinis Square & Navarinou Str.,
P.O.Box 56671, Limassol 3309, Cyprus

Telephone 357 -25343311, Facsimile 357-25356066
E-mail: cymepa@cytanet.com.cy
http://www.cymepa.org.cy

Ass. Professor Kokinou Eleni
NEREIDs Program
Dep.of Natural Resources and Environment
3 Romanou, Halepa, 73133, Chania, Crete

29th May 29, 2012

Dear Mrs. Kokinou,

It is my pleasure to write a letter in support of the proposal "NEREIDs" being submitted to the European Commission Directorate General for Humanitarian Aid and Civil Protection Echo Program. The NEREIDs proposal aims to strengthen civil protection and marine pollution cooperation among Greece and Cyprus, building on current best practices, creating an incident database of events and eLearning material to support professionals and volunteers. Oil spills produced from explosions on the oil and gas production platforms (Piper Alpha, 1978; Montara, 2009 and the BP Deepwater Horizon spill, 2010) or sea accidents of tankers comprise a major environmental and financial threat. We strongly believe that our experience in hydrocarbon exploration and exploitation will be very useful for the educational purposes of the "NEREIDs» proposal.

Best of luck with your grant application

Yours sincerely,

Dr. Michael Ierides
General Secretary

Cyprus Marine Environment Protection Association (CYMEPA)

CYMEPA is the National Operator of all Programmes of

Fee (Foundation for Environmental Education)   Blue Flag   Young reporters   Eco-Schools   The Green Key