



Workshops

WORKSHOPS

THÈME 1 : AVANCÉES DE LA RECHERCHE - SCIENCES DE L'INFORMATION & TECHNIQUES
NAVALES

5th International Workshop on Information Fusion and Geographical Information Systems : Towards the Digital Ocean

ORGANIZATION : The Research Institute of the French Naval Academy **IRENAV**, and the St-Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences **SPIIRAS**.

TIME : Tuesday 10th (9:00-18:00) and Wednesday 11th May (9:00-16:00)

LANGUAGE : English

TOPIC : "The 5th International Workshop on Information Fusion and Geographical Information Systems (IF&GIS 2011) is a premier event in the development of theories, models and advanced applications of Geographic Information Systems (GIS). It follows a series of successful workshops held in 2003, 2005, 2007 and 2009 in St. Petersburg. It has been continuously organized by the OOGIS research laboratory of the St Petersburg Institute for Informatics and Automation (SPIIRAS). The 5th event will have a specific focus on maritime geographical information systems and the digital ocean. The 5th IF&GIS workshop will bring academic and industrial experts from a large set of fields such as GIS, mathematics, statistics, artificial intelligence, geography, computational geometry, cognitive science, spatial databases, visualization, environment sciences and underwater acoustic."

WEBSITE : www.if-gis.com

CONTACTS : Pr. Christophe CLARAMUNT **IRENAV**, christophe.claramunt@ecole-navale.fr
Pr. Yaroslav SHALAMAIIKO **SPIIRAS**, shal@oogis.ru

N.B : *The Workshop Proceedings have been published by Springer-Verlag in series Lecture Notes in Geoinformation and Cartography. More information on the Springer website, www.springer.com.*

The 5th International Workshop on Information Fusion and Geographical Information Systems (IF&GIS'2011) was held from May 10-11, 2011 in Brest, (France) and having a specific focus on maritime geographical information systems and the digital ocean. This series of workshops is continuously organised by the OOGIS research laboratory of St Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS) and Ecole Navale. In May of 2011 IF&GIS'2011 was organised under an umbrella of the 3rd International Conference on Safer Seas. The workshop successfully continued the biannual series, and as always attracted representatives of academic and industrial community from a wide range of disciplines including computer science, geography, statistics, mathematics, hydrograph, geomorphology, and environmental sciences.

The objective of this workshop was to consider the development of Geographic Information Systems' science with a specific relation to Maritime GIS Applications, GIS data fusion, and computational developments.

The scope of the 5th IF&GIS workshop and, hence, its Proceedings address several research issues of modeling, analysis, information processing and visualization of geographical information with a specific application to the maritime environment. Maritime GISs are at the leading edge of the novel applications oriented to navigation safety, and several contributions presented at the workshop consider this aspect in depth. The papers selected by the international program committee reflect problems of multi-disciplinary approaches to shipping and navigation, monitoring, planning and surveillance of maritime areas as well as the concept of maritime safety and security, and maritime transportation. While traditional topics of GIS conferences are well represented and still advanced, several new domains with an emphasis on the problems of scientific and technological innovations and possibilities to make the seas safer and cleaner, and meetings new challenges with respect to economic and shipping trends are emerging. The issues of information assurance and protection for GIS have also been integrated into the workshop program, at that, including computer systems' protection, information technologies' complex security maintenance of by scanning protection mechanism as applicable to GIS.

The submission process had attracted 38 abstracts from 14 countries, and 26 papers have selected for reviewing. After a thorough reviewing the Program Committee accepted for presentation and publication 15 papers from 9 countries, including two invited papers. Based on the accepted papers the following four sessions were made up: Ontology and Programming Technologies for GIS and GIS Applications; GIS Data Fusion; GIS Algorithms and Computational Issues; Novel and Emerging Marine GIS Research Areas. The IF&GIS 2011 program was enriched by contributions from two invited speakers: Distinguished Professor Jean-Claude Thill, University of North Carolina at Charlotte, United States, and Professor Bin Jiang, University of Gävle, Sweden, whose invited papers are also included in the volume.

The success of the workshop is conspicuously due to the joint efforts of sponsors, organizers, reviewers and participants. We would like to acknowledge the contribution of organizers of 3rd International Conference on Safer Seas, contribution of the Program Committee members and specially recognize the support and sincere effort of all the reviewers; our deep gratitude undoubtedly regards all the participants and all the authors of submitted papers. We are grateful to our sponsors, the Russian Academy of Sciences and the US Office of Naval Research Global (ONRGlobal), Brest Métropole Océane, Technopôle Brest Iroise, Pôle Mer Bretagne, Région Bretagne, Conseil Général de Bretagne for their generous support. Finally, we also wish to extend our gratitude to Springer's LNCS team managed by Dr. Christian Witschel for their help and collaboration.



May 2011
Vasily Popovich
Christophe Claramunt
Manfred Schrenk
Thomas Devogele
Kyrill Korolenko

4th International Workshop on geospatial semantics, GeoS 2011

ORGANIZATION : The Research Institute of the French Naval Academy IRENAV and the National Polytechnic Institute of Mexico IPN.

TIME : Thursday 12th (9:00-18:30) and Friday 13th May (9:00-13:00)

LANGUAGE : English

TOPIC : "GEOspatial Semantics (GeoS) is an emerging research area in the domain of geographic information systems and spatial databases. The fourth edition aims at providing a forum for the exchange of state-of-the-art research results in the areas of geospatial semantics modeling and processing. It has been largely recognized that Geospatial semantics play an important role for the development of next-generation spatial databases and geographic information systems, as well as specialized geospatial web services. The previous editions of the conference – GeoS 2005, GeoS 2007, and GeoS 2009 - have been organized in Mexico City, Mexico."

WEBSITE : www.geosco.org ; Check out the Program ; (Previous editions)

CONTACTS : Pr. Christophe CLARAMUNT **IRENAV**, christophe.claramunt@ecole-navale.fr
Pr. Sergei LEVASHKIN **IPN**, sergei@levashkin.com

N.B : *The Workshop Proceedings will be published by Springer in series Lecture Notes in Computer Sciences.*

GEOspatial Semantics (GeoS) is an emerging research area in the domain of Geographic Information Science. It aims at exploring strategies, computational methods, and tools to support semantic interoperability, geographic information retrieval, and usability. Research on geospatial semantics is intrinsically multidisciplinary and therefore GeoS traditionally brings together researchers whose expertise will address issues from diverse fields such as cognitive science, geography, linguistics, mathematics, philosophy, and information technology.

The fourth edition of GeoS provided a forum for the exchange of state-of-the-art research results in the areas of modelling and processing of geospatial semantics. Research in geospatial semantics is critical for the development of next-generation spatial databases and geographic information systems, as well as specialized geospatial web services. Within the context of the semantic web, the need for semantic enablement of geospatial services is crucial, given the ever increasing availability of mainly unstructured geospatial data. This problem is exacerbated by the very recent and ever growing phenomena of crowd sourcing and Volunteered Geographic Information.

These proceedings contain full research papers which were selected from among 23 submissions received in response to the Call for Papers. Each submission was reviewed by three or four Program Committee members and 13 papers were chosen for presentation. The papers focused on formal and semantic approaches, time and activity-based patterns, ontologies, as well as quality, conflicts and semantic integration. Overall, a wide range of research efforts was presented by researchers from institutions in Italy, Mexico, France, Belgium, Japan, UK, USA, Switzerland, Portugal, and Germany.

We are thankful to all the people that contributed to the success of this event. The members of the Program Committee offered their help with reviewing submissions. Our thanks also go to the researchers and doctoral students of the Naval Academy research Institute who formed the Local Organizing Committee, and to Brest Métropole Océane and Technopôle Brest Iroise who were the hosting institution and co-sponsored GeoS 2011. Other co-sponsors include the Intelligent Processing of Geospatial Information Laboratory (PIIG) of the Centre for Computing Research (CIC) of the National Polytechnical Institute (IPN) and the National Council for Science and Technology (Mexico) to which we are also grateful. This year's conference was held under the umbrella of the Safer Seas III-2011 Conference, therefore providing great opportunities for additional stimulating exchanges. Finally, we would like to sincerely thank all the authors who submitted papers to GeoS 2011, as well as our keynote speaker Prof. Max Craglia for his talk on "Inter-disciplinary interoperability for global sustainability research".

May 2011

Christophe Claramunt
Sergei Levashkin
Michela Bertolotto



Conception des navires : réglementation et calcul de structures

ORGANISATEUR : L'Ecole Nationale Supérieure de Techniques Avancées Bretagne ENSTA Bretagne.

DATE : Jeudi 12 mai (9h-18h)

LANGUES : Français/Anglais

SUJET : "Dans le cadre de « Safer Seas 2011 », l'ENSTA Bretagne organise un workshop spécialisé sur le thème de la conception des navires en matière de réglementation et de calcul de structures. Celui-ci portera sur les avancées scientifiques visant à améliorer la sûreté des navires à travers la prise en compte des principaux facteurs pouvant conduire à la défaillance de la structure. Ce workshop abordera notamment l'intégration dans les critères de dimensionnement, de la fatigue de ces structures, des chocs entre la coque du navire et la surface de l'eau (slamming), des mouvements de fret liquide (sloshing) ou encore du flambement (buckling), mais également les perspectives, en matière de réglementation, pour la conception des ouvrages futurs. Il sera articulé autour d'interventions menées conjointement par des organismes de réglementation, des industriels du secteur naval ainsi que des laboratoires développant des recherches dans ces domaines."

SITE : www.ensta-bretagne.fr

CONTACT : Dr. David THEVENET **ENSTA Bretagne**, david.thevenet@ensta-bretagne.fr

Protection de l'environnement sous-marin face aux nuisances sonores.

ORGANISATEUR : L'Ecole Nationale Supérieure de Techniques Avancées Bretagne ENSTA Bretagne.

DATE : Jeudi 12 mai (8h30-12h30)

LANGUE : Anglais

SUJET : "L'activité humaine génère des nuisances sous l'eau (explosions, vibrations, battages de pieu, vibrations engendrées par les moteurs des navires, ...) qui perturbent jusqu'à compromettre la pérennité des espèces animales et végétales sous-marines. Actuellement, les acteurs de cette pollution sonore n'ont que peu de solutions pour limiter ces nuisances.

En lien avec la conférence plénière sur les politiques, les réglementations et les avancées en matière de technologies marines, ces rencontres permettront d'aborder des domaines importants de la recherche en matière de nuisances sonores, tels que

- la caractérisation des sources sonores sous-marines et leurs nuisances associées (explosions, battage de pieux, ...).
- la quantification des seuils de nuisance sur les espèces composant l'écosystème sous-marin.
- les palliatifs (de la réglementation aux procédés innovants).

Les rencontres permettront ainsi de dresser un état de l'art sur le sujet. S'en suivront une discussion et une liste d'actions à poursuivre

SITE : www.ensta-bretagne.fr

CONTACT : Dr. Michel Arrigoni **ENSTA Bretagne**, Michel.Arrigoni@ensta-bretagne.fr



Workshops

WORKSHOPS

THÈME 2: CONNAISSANCE ET EXPLOITATION DURABLE DES MERS ET TERRITOIRES MARITIMES



Cartographie terre-mer et gestion opérationnelle des zones côtières

PARTIE 1 : Rencontres Françaises « Cartographie côtière »

ORGANISATEURS : Le Service Hydrographique et Océanographique de la Marine SHOM, l'Institut Français de Recherche pour l'Exploitation de la Mer IFREMER, l'Institut Géographique National IGN et Toulon Provence Méditerranée TPMed.

DATE : Jeudi 12 mai (8h30-12h30)

LANGUE : Français

SUJET : La diversification des activités économiques en mer et la concentration des populations sur le littoral génèrent sur les zones côtières des conflits d'usage, une vulnérabilité au risque et une pression écologique accrues. Les services de l'Etat, les collectivités territoriales et les experts des instituts scientifiques et techniques ont besoin de données fiables sur la bande côtière pour notamment déterminer les zones propices à l'exploitation des énergies marines dans le respect des autres usages, protéger la biodiversité, évaluer les risques de submersion et, le cas échéant, déclencher une alerte, prévoir la dérive de nappes d'hydrocarbures et de conteneurs...

L'atelier cartographie côtière, dans lequel les représentants des utilisateurs pourront présenter leurs besoins et l'emploi des données déjà disponibles, et les experts pourront présenter les programmes en cours et les dernières avancées des techniques, est également ouvert notamment aux industriels et aux chercheurs.

CONTACTS : Dr. Gilles Martinoty **IGN**, gilles.martinoty@ign.fr
Jacques Populus **IFREMER**, jacques.populus@ifremer.fr
Arnaud Demellier **TPMed**, ademellier@tpmed.org
Yves Henri Renhas **SHOM**, yves-henri.renhas@shom.fr

La diversification des activités économiques en mer et sur le littoral, la concentration de la population génèrent sur les zones côtières une vulnérabilité au risque et une pression économique accrues. La gestion de ces zones a besoin de s'appuyer sur une cartographie détaillée. Dans le cadre de la manifestation Safer Seas, le SHOM a proposé d'organiser un atelier sur la "cartographie côtière" en liaison avec un atelier international sur la gestion des zones côtières.

Le programme, détaillé ci-après, a été élaboré par un comité de pilotage composé de membres de divers organismes :

- Arnaud Demellier : Toulon Provence Méditerranée
- Gilles Martinoty : Institut géographique national (IGN)
- Jacques Populus : Ifremer
- Yves-Henri Renhas : Service hydrographique et océanographique de la marine (SHOM).

Programme de l'atelier "cartographie côtière" du 12 mai 2011 :

- **8h30** : accueil, ouverture de l'atelier, présentation des exposés de la 1ère partie, Jean-Claude Le Gac;
- **8h35** : les techniques ; point sur les données disponibles (Histolitt), sur le produit SCAN-Littoral, sur l'acquisition des données et leur présentation dans un modèle numérique de terrain : Nathalie Leidinger, SHOM ;
- **9h05** : la programmation ; vers une coordination nationale : Frédéric Herpers, SG Mer ;
- **9h35** : l'acquisition des données en mer d'Iroise : Thierry Canteri et Philippe Le Niliot, parc national marin d'Iroise et sur le littoral finistérien : Sébastien Le Coustumer, conseil général du Finistère ;
- **10h25** : reprise de l'atelier, présentation des exposés de la 2ème partie, Gilles Martinoty ;
- **10h30** : le point de vue des utilisateurs pour la communauté d'agglomérations de Toulon – Provence – Méditerranée : Alexandre Lafitte Olano et Lise Sarro, TPM ;
- **11h** : le point de vue des utilisateurs pour le littoral du Languedoc Roussillon : Cyril Vanroye (DDTM de Vendée) ;
- **11h30** : l'évaluation et la prévention des risques ; l'influence de la bathymétrie sur l'hydrodynamique côtière, sur la propagation de la houle, des ondes de tempête, des ondes cycloniques ; modélisation du large vers la côte : Yves Morel, SHOM ;
- **12 h** : l'évaluation et la prévention des risques ; modélisation des tsunamis, impact de la bathymétrie et de la topographie : Anne Loevenbruck, CEA ;
- **12h30** : clôture de l'atelier.

Ce programme a permis de faire le point des techniques d'acquisition de données et de leur représentation en cartographie côtière. L'influence de la bathymétrie côtière sur la propagation de la houle et l'impact des tsunamis a été traitée. Et surtout, les utilisateurs ont pu présenter leurs projets (Finistère) et l'emploi des données (Toulon – Provence – Méditerranée et Languedoc Roussillon). Environ 36 personnes ont pu assister à l'atelier, dont l'insertion dans Safer Seas a permis à des auditeurs non-experts d'être sensibilisés à l'importance de ce sujet.

Un cédérom reprenant l'ensemble des planches présentées a été diffusé aux auditeurs qui l'ont demandé.



Cartographie terre-mer et gestion opérationnelle des zones côtières

[PART 2 : International workshop: “Coastal and marine cartography, operational oceanography & operational management of coastal and maritime zones”.](#)

ORGANIZATION : The Hydrographic and Oceanographic Department of the french Navy SHOM, the Brest Iroise Science Park TBI, Ecole Supérieure Nationale de Techniques Avancées Bretagne ENSTA-BRETAGNE, the Kiel/Schleswig Holstein Science Park KiWi, the Technopôle Maritime du Québec TMQ.

TIME : Thursday 12th May (14h-18h30)

LANGUAGE : English

TOPIC : The workshops organized on the theme of marine and coastal cartography, operational oceanography and their applications constitute a second illustration of the importance of geo-localized information for a sustainable development of human activities at sea and onshore. This international workshop will pursue the French meeting on “coastal cartography” and the scientific conferences on “Geographic Information Systems and their applications at sea” through an exchange on the needs and solutions related to an operational management of maritime zones and territories. Considering to the fast growth of maritime activities, and in the face of the new challenges that “sustainable development” represent for public authorities, maritime industries and sea professionals, these workshops will allow comparing scientific and technical approaches to the needs expressed by maritime territories. It will in particular analyze the situation in fast developing countries (South East Asia, South America, Black Sea.....) where sustainable development policies must also anticipate the impacts of climate change.

The goal of this workshop is to identify pilot cooperation actions, involving the public, the private and the research sectors that could be set up to accelerate the exploitation of scientific and technical advances in the field of OCZM and maritime spatial planning for a better exploitation of coastal zones and maritime spaces

CONTACTS : Fabienne Vallée **TBI**, fabienne.vallee@tech-brest-iroise.fr
Gunnar Tietze **KiWi**, gunnar.Tietze@GeoTopic.de
Nicolas Seube **ENSTA-BRETAGNE**, Nicolas.seube@ensta-bretagne.fr
Yves Henri Renhas **SHOM**, yves-henri.renhas@shom.fr

With the support of:

- IOI/Unesco IOC,
- the French hydrographic service of the marine (SHOM),
- ENSTA Bretagne.

CONTEXT AND OBJECTIVES

This international workshop will pursue the French meeting on “coastal cartography” and the scientific conferences on “Geographic Information Systems and their applications at sea” through an exchange on the needs and solutions related to an operational management of maritime zones and territories.

Face to the fast growth of maritime activities, and face to the new challenges that represent for the “sustainable development” for public authorities, maritime industries and sea professionals, these workshops will allow comparing scientific and technical approaches to the needs expressed by maritime territories. It will in particular analyze the situation in fast developing countries (South East Asia, South America, Black Sea.....) where sustainable development policies must anticipate the impacts of development and climate change.

The goal of this workshop is to identify pilot cooperation actions, involving the public, the private and the research sectors that could be set up to accelerate the exploitation of scientific and technical advances in the field of ICZM and maritime spatial planning for a better exploitation of coastal zones and maritime spaces.

PROGRAM

Chairman: Dr. Cherdsak Virapat; Executive Director of the International Ocean Institute (IOI)
Co-Chairmen : Laurent Bellavance -Director of Technopole Maritime of Québec; Gunnar Tietze (Kiwi/ Cluster North Germany).
Animated by : Eric Vandenbroucke -Vice Director of the science park Brest Iroise.

14.00 INTRODUCTION

Key note Speeches by:

- ❑ Dr Cherdsak Virapat - Executive director of International Oceanographic Institute; “IOI-IOC Actions for a sustainable development of coastal zones”.
- ❑ M. Yves Guillam - SHOM Director of Strategy. “Evolution of needs and usage in the field of digital cartography”.

14.30 MANAGING MARITIME TERRITORIES & ACTIVITIES, NEEDS AND CONSTRAINTS

Testimonies of public authorities, port authorities, and maritime industries.

- ❑ Vietnam - Dr LAN - Deputy Director of IMER- Sustainable development of coastal zones in Vietnam.
- ❑ Argentina - Dr. Rubén ZARATE – Presidente Agencia Comodoro Conocimiento; CID Mar Austral-Needs and objectives for coastal zone management and offshore exploitation/maintenance.
- ❑ Mexico-M. ZEGBE Alfonso (SEMARNAT) / M. ALVARADO-MARTINEZ Victor minister of environment Government of Veracruz -Sustainable development of the region of Vera Cruz -Issues and visions.

- ❑ Romania and the Black Sea- Dr Alexander Bologna – Marine Institute Grigore Antipa- Scientific director- ICZM in Romania and the Black Sea – status and perspectives.

15.30 BREAK

16.00-17.30 METHODS AND TECHNICAL RESPONSES

- ❑ M. Eric Vandenbroucke – Vice director of the science par Brest Iroise- ICZM from a concept to a global response with Littoralis.
- ❑ Applications of ICZM:
 - Me. Gael Durand-IDHESA “The Contract of Bay” Application to water/environmental quality.
 - M. Laurent Bellavance – Director the Science park of Rimouski –The Observatory of the St Laurent.
- ❑ Technological modules
 - M. Mathias Kniepoff (HELZEL GmbH/ ACTIMAR) Meteo-oceanography and physics of coastal zones
 - M. Yves-Henri Rhenas (SHOM) LITTO 3D Coastal Cartography and cooperative approaches for maritime and coastal spatial planning”.

17. 30 EDUCATION AND TECHNOLOGY TRANSFER

- ❑ Nicolas Seube from ENSTA Bretagne and CIDCOii Training and education programs.

3-DISCUSSION- POSSIBLE COOPERATIVE FRAMEWORK AND PILOT ACTIONS

SYNTHESIS OF THE PRESENTATIONS

KEYNOTE SPEECHES

The two first presentations of Dr Virapat (IOI) and M. Guillam (SHOM) aimed at drawing a global picture of coastal & maritime zones management issues, at a global level.

Dr Virapat introduced the works carried out by IOI and Unesco-IOC to help maritime territories facing the complex balance between environmental protection and economic development issues. Works are carried out at governance and scientific levels, at national/regional and international levels to combine political will, funding capacities and scientific/ technical capacities.

M. Guillam presented as a response the technical issues related to the management of coastal and maritime zones. Digital cartography has provided the basis for planning and managing maritime activities. Integrating physical data of the coastal areas, onshore and offshore, are basis for operational oceanography.

The two first presentations of Dr Virapat (IOI) and M. Guillam (SHOM) aimed at drawing a global picture of coastal & maritime zones management issues, at a global level.

Dr Virapat introduced the works carried out by IOI and Unesco-IOC to help maritime territories facing the complex balance between environmental protection and economic development issues. Works are carried out at governance and scientific levels, at national/regional and international levels to combine political will, funding capacities and scientific/ technical capacities.

M. Guillam presented as a response the technical issues related to the management of coastal and maritime zones. Digital cartography has provided the basis for planning and managing maritime activities. Integrating physical data of the coastal areas, onshore and offshore, are basis for operational oceanography.

MANAGING MARITIME TERRITORIES & ACTIVITIES, NEEDS AND CONSTRAINTS

The second part of the workshop gathered testimonies of public authorities from a variety of partner territories in Asia, South America, East Europe:

- ❑ Vietnam -Dr LAN- Deputy Director of IMER- Sustainable development of coastal zones in Vietnam.
- ❑ Argentina-Dr. Rubén ZARATE – Presidente Agencia Comodoro Conocimiento; CID Mar Austral-Needs and objectives for coastal zone management and offshore exploitation/maintenance.
- ❑ Mexico-M. ZEGBE Alfonso (SEMARNAT) / M. ALVARADO-MARTINEZ Victor minister of environment Government of Veracruz -Sustainable development of the region of Vera Cruz -Issues and visions.
- ❑ Romania and the Black Sea- Dr Alexander Bologa – Marine Institute Grigore Antipa-Scientific director- ICZM in Romania and the Black Sea – status and perspectives.

Despite the physical particularities of these territories, the presentations proved that maritime territories, especially in fast developing countries, face similar problems of water pollutions, coastal erosion, reduction of bio-resources, plus maritime risks linked to port/transport activities, offshore exploitation reinforced by natural hazards (storms/ typhoons, sea level rise). These similarities justify the will to strengthen cooperation and identify practical schemes for a sustainable management of coastal zones.

16.00-17.30 METHODS AND TECHNICAL RESPONSES

The third part of the workshop was an analysis of potential approaches and main technical modules at the basis of “operational management centres”.

- ❑ M. Eric Vandenbroucke – Vice director of the science par Brest Iroise, introduced the concept of ICZM and the grouping of companies “Littoralis” that provides a unique entry point to the set of services and techniques required for the management of coastal territories.

- ❑ Applications of ICZM:
 - Me. Gael Durand-IDHESA – Presented the “Contract of Bay” which is a particular application of ICZM to water/environmental quality.
 - M. Laurent Bellavance, director the Science park of Rimouski, presented the “observatory of the St Laurent”, another international action carried out to manage environmental impacts along the river.
- ❑ Technological modules
 - M. Mathias Kniepoff from the company HELZEL introduced the operational oceanographic services developed with the company ACTIMAR thanks the “over the horizon radar technology. Services provide advanced knowledge and forecasting means related to the physics of maritime zones with as an added value its wide coverage (120km² depending on the size of the grid cells
 - M. Yves-Henri Rhenas (SHOM) – was supposed to present a new tools for a seamless cartography of coastal areas. “LITTO 3D” has been developed in cooperation IGN (national geographic institute) to offer seamless sea-earth cartography as required for maritime and coastal spatial planning”. Mr Rhenas has to leave before the presentation. Slides are added to the report.

17. 30 EDUCATION AND TECHNOLOGY TRANSFER

- ❑ Nicolas Seube from ENSTA Bretagne and CIDCOⁱⁱ have presented training and education programs related to hydrography and oceanography and their applications. These programs are established in networks by the national hydrographic services. The presentation also underlined the necessity to maintain high quality levels of education and training to guarantee in future the quality of measurements.

4-DISCUSSION- POSSIBLE COOPERATIVE FRAMEWORK AND PILOT ACTIONS

The management of coastal territories is a complex issue. It requires planning and monitoring means for both coastal and maritime activities. Moreover the set up of governance schemes requires the involvement of local public authorities and a strong cooperation between the public , the scientific and the private sectors. Territorial cooperation, either in a bilateral way or through networks of partner territories has proved to facilitate the set up of such “Steering Committees” to define and implement “coastal zone management programs”. On the other hand, the support of international nongovernmental organizations facilitates the dialog with and support of national authorities, plus the access to environmental or development funds.

A second cooperation axis concerns the reflexions in progress on the content in terms of services and technologies of an “operational management centres of coastal zones”. Some components have been presented and discussed during the workshop but the topic would be worth being studied in cooperation, to take into account the particularities and priorities of the partner territories.

At last the presentations and discussions have underlined the potential of cooperation for education and training on the different facets of that complex topic.

We thank all participants for their active contribution to the success of the workshop. We send special thanks also to IOC and IOI for their support and for the booklets on maritime spatial planning that have been quite appreciated by the participants.



i SEMARNAT : Ministry of environmental affairs - Mexico

ii CIDCO : Interdisciplinary Centre of Development in Cartography of Oceans – R&D centre in marine geomatic. Promotion and technology transfer for advanced technologies for the acquisition, management and graphic representation of marine spatial data.

CLIMATE CHANGES IN POLAR ZONES – THE NEW SEA ROUTES

ORGANIZATION : The Paul-Emile Victor French Polar Institute IPEV, the Université Laval de Québec, Brest métropole océane BMO, and the Technopôle Maritime du Québec TMQ.

TIME : Thursday 12th May (14:00-18:00)

LANGUAGE : English

TOPIC : This workshop will allow prolonging the session «New shipping routes” of the main conference through analysis of our knowledge of these spaces, and of the challenges that represent the acquisition of data (cartographic, hydrographic, meteo-oceanographic...) necessary to ensure safety of maritime roads or the exploitation of submarine resources, and the preservation of these last virgin spaces.

CONTACTS : Yves FRENOT **IPEV**, yfrenot@ipev.fr

Pr. Frédéric LASSERRE **UNIVERSITE LAVAL**, Frederic.Lasserre@ggr.ulaval.ca

Gildas BOREL **BMO**, gildas.borel@nasca.fr

Laurent BELLAVENTE **TMQ**, l.bellavence@tmq.ca



Workshops

WORKSHOPS

THÈME 3: PRÉVENTION, INTERVENTION, RÉPARATION



Journée d'échanges sur la sécurité de la navigation dans les parcs éoliens

ORGANISATEUR : Préfecture Maritime de l'Atlantique

DATE : Mardi 10 mai (9h-18h)

LANGUE : Français/Anglais

SUJET : Le président de la république a annoncé le 26 janvier le lancement du programme éolien en mer français avec un premier appel d'offres qui sera publié début mai 2011.

La préfecture maritime de l'Atlantique souhaite donc organiser une journée d'échanges sur la sécurité de la navigation à proximité et au sein des parcs éoliens.

Cette journée s'adresse à l'ensemble des acteurs du monde maritime concernés, qu'ils naviguent à proximité des éoliennes, interviennent dans des opérations de sauvetage ou encore mettent en œuvre des dispositifs de surveillance.

Elle a pour objectif de faire un point pratique concernant les impacts des éoliennes sur les systèmes fixes ou embarqués, sur les mesures qui peuvent être mises en œuvre pour compenser les pertes de visibilité et assurer la surveillance au sein des parcs, sur la prise en compte des différentes activités et des interventions de sauvetage. Elle s'appuiera notamment sur les retours d'expérience de nos voisins européens.

CONTACT : Marianne PIQUERET **Préfecture Maritime**, aem@premar-atlantique.gouv.fr

Cette journée avait pour objectif de faire un point sur l'impact des éoliennes sur les différents systèmes de surveillance de la navigation, les mesures compensatoires à envisager et les interventions de sauvetage au sein des parcs.

Une centaine de personnes ont assisté aux présentations qui émanaient de partenaires variés : le CETMEF, le ministère de la défense, l'action de l'Etat en mer (préfecture maritime, CROSS, Marine nationale), les professionnels (Comité Régional des Pêches Maritimes et des Elevages Marins de Bretagne, AFCAN), des sociétés privées (Véritas, Geotopic, Luxspace), la SNSM ou encore le MCA (Maritime and Coastguard Agency).

A la demande d'un grand nombre de participants, les documents ont été mis en ligne sur le site FTP de la préfecture maritime.

Il ressort des échanges que, les arbitrages sur les zones propices à l'implantation d'éoliennes ayant été rendus par le gouvernement, la question de l'opportunité de développer l'éolien en mer n'a pas fait débat. Au contraire, il est apparu que l'ensemble des partenaires proposaient de travailler ensemble à l'élaboration de solutions pour concilier au mieux la préservation des usages au sein des parcs éoliens avec la sécurité maritime ainsi que la compatibilité des installations avec les enjeux de la défense.

Parmi les pistes qui ont été évoquées, on pourra citer la nécessité de réaliser des plans d'intervention et de secours ainsi que des exercices réguliers, la participation possible aux opérations de sauvetage des moyens nautiques de maintenance des exploitants, l'équipement des plateformes d'accès pour l'accueil des naufragés...

Par ailleurs cette journée a permis de nouer des contacts afin de poursuivre le travail à différents niveaux :

- dans le cadre d'instances internationales en charge de la sécurité maritime (North Atlantic Coast Guard Forum, Anglo French Accident Technical Group) ;
- dans le cadre d'actions de recherche développement, avec l'Allemagne notamment, pour avancer sur les sujets qui posent encore question (impact sur les radars, transmission des informations recueillies au niveau des parcs éoliens vers les organismes en charge du sauvetage en mer...).



«SAR» (Search and Rescue / Sauvetage en mer), 4ème Workshop international

ORGANISATEUR : L'Institut Français de Recherche pour l'Exploitation de la Mer IFREMER, les Gardes-Côtes des Etats-Unis U.S Coastguards, l'Institut Météorologique de Norvège Met.No, La Fondation Franco-Norvégienne FFN et la Commission Conjointe pour l'Océanographie et la Météorologie Marine JCOMM.

DATE : Mardi 10 (9h-18h), mercredi 11 (9h-16h) et jeudi 12 mai (9h-12h30)

LANGUE : Anglais

TOPIC : 4ème Workshop International sur les technologies de recherche et de sauvetage en mer et autres opérations et services d'interventions d'urgence en mer.

Le séminaire a pour but d'améliorer l'information mutuelle sur les projets en cours en matière de techniques de recherche, d'assistance et de secours en mer. Outre les aspects liés à la dérive d'objets perdus en mer, déjà abordés lors des workshops précédents, on s'intéressera également aux problèmes liés au développement des nouvelles routes de navigation et à l'utilisation des nouvelles technologies telles que l'AIS.

SITE : www.ifremer.fr/web-com/sar2011/

CONTACTS : Michel OLAGNON **IFREMER**, michel.olagnon@ifremer.fr
Christophe MAISONDIEU **IFREMER**, christophe.maisondieu@ifremer.fr

SEMINAIRE

*avec le soutien de la Fondation Franco-Norvégienne
et de la JCOMM*

Compte-rendu succinct

**Technologies pour l'assistance,
la recherche et le sauvetage en mer**

Déroulement

Le séminaire s'est tenu du 10 au 12 Mai avec un excellent niveau de participation tant qualitatif que quantitatif. On a focalisé la première demi-journée sur les entrées pour les modèles de dérive d'épaves et de naufragés, la deuxième sur les outils de modélisation de cette dérive, la troisième sur les enseignements à tirer des recherches dans le cas du vol AF447, la quatrième et la cinquième sur l'analyse des opérations de sauvetage, les outils correspondants et les perspectives générales : défis posés par la taille des navires, les communications et les zones polaires. La session la plus fréquentée, celle consacrée au vol AF447, a réuni une soixantaine de personnes, les autres entre 30 et 40.

Participation

Compte-tenu de l'insertion dans Saferseas, il n'est pas facile d'identifier les participants spécifiques au séminaire. Toutefois, sur la base des orateurs et des personnes connues des organisateurs, on peut estimer la participation étrangère attirée spécifiquement grâce au workshop à une vingtaine de personnes, et sans doute autant ou un peu plus pour les Français. Parmi elles, on en trouve 6 représentant la Norvège et 6 les USA, 2 l'Italie, 2 la Pologne, 2 le Royaume-Uni, 1 l'Espagne, 1 le Canada.

Perspectives

Les organisateurs du workshop sont éditeurs d'un numéro spécial du Journal of Ocean Dynamics (Springer) qui sera consacré à ces problèmes. Cela permettra de renforcer les liens entre les participants en vue d'une prochaine édition en 2013 ou 2014, et de motiver la communauté scientifique autour des problèmes liés au sauvetage en mer.

Programme

TUESDAY MAY 10TH MORNING SESSION

Ocean models and environmental data measurement for SAR applications

Chairman : Michel Ollagnon, Ifremer

09h00 - 09h10 Opening and welcome Michel Ollagnon

09h10 - 09h35 "*Arctic Ocean Currents and sea-ice forecasts from Myocean*"

Laurent Bertino, François Counillon, Pavel Sakov, Arne Melsom

09h35 - 10h00 "*GPU-based simulation of radar sea clutter*"

Goulven Monnier, Daniel Le Hellard, Sébastien Vince, Julien Houssay, Thierry Landeau, Bertrand Chapron, René Garello, Christian Cochin, Yvonick Hurtaud

10h00 - 10h25 "*Results from the Mid Atlantic High frequency Radar Network*"

Hugh John Roarty, Ethan Handel, Erick Rivera, Michael Smith, Josh Kohut, Scott M Glenn

11h00 - 11h15 "*Introduction : SLDMB Project*"

Brian Stone

11h15 - 11h40 "*iSLDMB - Generation III Self Locating Datum Marker Buoy*"

Tony Chedrawy

11h40 - 12h05 "*A second generation Self Locating Datum Marker Buoy*"

Gary Williams, Eugene Zeyger

12h05 - 12h30 "*Assimilation of Lagrangian drifters trajectories into surface current Models*"

Marc Pavec, Victor Turpin, Vincent Taillandier

TUESDAY MAY 10TH AFTERNOON SESSION

Drift Forecast Models and Tools

Chairman : Øyvind Breivik, Norwegian Meteorological Institute

14h00 - 14h25 *"Support of Search and rescue Operations at Meteo-France"*

Pierre Daniel, Denis Paradis, Valérie Ulvoas

14h25 - 14h50 *"Curdrift, leeway prediction using HF radar measurements for elapsed time and models for future horizons"*

Nicolas Thomas

14h50 - 15h15 *"Rapid deployment of HF radars with open-mode analysis and model-data blending for near-shore oil spill and search and rescue applications"*

Vicente Fernandez

15h15 - 15h40 *"Backtracking drifting objects using an iterative algorithm with a forward trajectory model"*

Øyvind Breivik, Tor C. Bekkvik and Atle Ommundsen

15h40 - 16h05 *"SAROPS 2.0: The challenges, and benefits, of implementing a web-based version of a Search & Rescue planning tool"*

Eric Comerma, Eoin Howlett, Art A.Allen

16h30 - 16h55 *"Search Modelling and Optimization in the US Coast Guard's Search and Rescue Optimal Planning System (SAROPS)"*

Lawrence. D. Stone, Thomas M. Kratzke, John R. Frost

16h55 - 17h20 *"Real-time calculation of leeway parameters for drifting vessels using AIS"*

Yngve Heggelund, Kjell Røang

17h20 - 17h45 *"Towards a Standard Method of Conducting Leeway Field Experiments"*

Art A. Allen, Øyvind Breivik, Christophe Maisondieu, Jens-Christian Roth

WEDNESDAY MAY 11TH MORNING SESSION

Far-off areas : Learnings from Aircraft accidents

Chairman : Art A. Allen, U.S. Coast Guard

09h00 - 09h25 *"Lessons from Flight 447 Undersea Search Operations"*

Olivier Ferrante

09h25 - 09h50 *"A strategy for producing refined currents in the Equatorial Atlantic Ocean in the context of the search of the AF447 wreckage"*

Sylvain Cailleau, Edmée Durand, Marie Drévilion, Eric Greiner, Stéphane Law-Chune, Jean-Michel Lellouche, Denis Paradis, Guillaume Reffray.

09h50 - 10h15 "*Search of the AF447 wreckage area*"

Michel Ollitrault, A. Bentamy, B. Blanke, C. Chen, A. Colin de Verdière, J. Condetto, D. Delaitre, N. Diansky, M. Drévilion, O. Ferrante, D. Croizé-Fillon, E. Greiner, C. Kermabon, F. Lefèvre, P. Lezard, R. Limeburner, S. Louazel, G. Nurser, D. Paradis, J-P. Rannou, T. Reynaud, M-H. Rio, R. Scott, S. Travadel

10h15 - 10h40 "*Reverse Drift in the Air France flight 447*"

Stéphanie Louazel

SAFER SEAS Conference opening session

WEDNESDAY MAY 11TH AFTERNOON SESSION

Support tools for SAR operations

Chairman : C. Maisondieu, Ifremer

14h30 - 14h55 "*Evacuation of passenger ships: challenges and research activities*"

Philippe Corrigan, Antoine Breuillard, Nicolas Mery, Pierre Maurier

14h55 - 15h20 "*Investigation of passenger vessels performance during man overboard manoeuvre*"

Arkadiusz Lukaszewicz

15h20 - 15h55 "*Weather windows for common vessel operations*"

Kjell Røang, I. Eliassen, G. Fonnes

15h55 - 16h10 "*Use of Automatic Identification System for passing Search Area Coverage plans*"

Keith Oliver

Safer Seas Plenary Session "*Session 3 - Sauvetage en mer : analyse comparée*" "*Search and Rescue at Sea : comparison of practices*"

Chairman : Jean-François TALLEC Secrétaire Général de la Mer, Président du Forum des garde-côtes de l'Atlantique Nord

THURSDAY MAY 12TH MORNING SESSION

SAR operations

Chairman : Jean-Charles Cornillou, CROSS Corsen

09h00 - 09h25 "*Risk analysis associated with the Bourbon Dolphin scenario*"

Peter Kjeldsen

09h25 - 09h50 "*Cospas-Sarsat programme: from operations to MEOSAR*"

Jean-Charles Cornillou

09h50 - 10h15 "*IPBC or the future of the maritime radiocommunications*"

Jean-Yves Christien

10h15 - 10h45 "New Sea Routes"

François Duchêne

11h00 - 11h25 "SMC Simulator - A tool for training and SAR Mission Coordinators"

Jaroslaw Soliwoda, Zbigniew Burciu presented by Piotr Lizakowski

11h25 - 11h50 "Reliability of SAR action elements"

Teresa Abramowicz-Gerigk, Zbigniew Burciu, Franciszek Grabski Presented by Arkadiusz Lukaszewicz

11h50 - 12h15 "Challenges for SAR operations in the Barents Sea"

Tor Einar Berg, Beate Kvamstad

12h15 - 12h30 Conclusions and Wrap-up Jean-Charles Cornillou



L'ordre public en mer

ORGANISATEUR : L'Unité Mixte de Recherche AMURE de l'Institut Universitaire Européen de la Mer, de l'Université de Bretagne Occidentale UBO-IUEM / UMR-AMURE.

DATE : Jeudi 12 (9h-18h) et vendredi 13 mai (9h-18h)

LANGUE : Français

SUJET : De manière générale, l'ordre public désigne l'ensemble des règles, édictées dans l'intérêt général, qui régissent la vie en société. Une règle est qualifiée d'ordre public lorsqu'elle est obligatoire et s'impose pour des raisons impératives de protection, de sécurité, de moralité.

En mer, L'Etat peut être conduit à agir pour assurer la défense des droits souverains et des intérêts de la nation (liberté des communications en mer, règlements des conflits d'usage...) et mettre en œuvre ses pouvoirs d'intervention pouvant conduire à l'emploi de la force. Les nouveaux défis auxquels se trouve confrontées les activités maritimes (piraterie, réchauffement climatique...) imposent une nouvelle approche de l'ordre public en mer.

Le workshop aura pour objectif d'analyser dans quelle mesure cette nouvelle approche - tel le renforcement de la surveillance maritime - doit permettre de mieux sécuriser l'usage des mers et de leurs ressources.

CONTACT : Séverine JULIEN **UMR-AMURE**, severine.julien@univ-brest.fr

Risques technologiques en zone portuaire

ORGANISATEUR : Le Service Départemental d'Incendie et de Secours du Finistère (SDIS 29), le Technopole Brest Iroise (TBI) et le Centre d'Etudes Techniques Maritimes Et Fluviales (CETMEF).

DATE : Mercredi 11 mai (9h-16h30)

LANGUE : Français

SUJET : Ce workshop présente l'évolution des technologies numériques dans la gestion des données et des informations lors de sinistres en zone portuaire (installations fixes et navires). Ces innovations permettent d'améliorer la formation et l'intervention des acteurs (privés, publics, civils ou militaires).

CONTACT : Lieutenant-Colonel Hervé MAHOUDO **SDIS 29**, herve.mahoudo@sdis29.fr

Thème

Ce workshop, organisé par le Service Départemental d'Incendie et de Secours du Finistère (SDIS 29), le Technopole Brest Iroise (TBI) et le Centre d'Etudes Techniques Maritimes Et Fluviales (CETMEF), présente l'évolution des technologies numériques dans la gestion des données et des informations lors de sinistres en zone portuaire (installations fixes et navires).

Ces innovations permettent d'améliorer la formation et l'intervention des acteurs (Privés, publics, civils ou militaires).

Conférenciers

- Introduction. Présentation du workshop
Mr André Péron, directeur HSE – Université de Bretagne Sud
- Outils de gestion de crise pour les sites portuaires et adaptation, évolution sur les installations fixes et navires – plate-forme SecuRevi
Lieutenant-Colonel Hervé Mahoudo et Mr Gilles Cloarec – SDIS 29
- Toxicologie et procédure d'intervention (phosphine, ammoniac, algues vertes et hydrocarbures)
Docteur Alain Baert - Centre antipoison de Rennes
Lieutenant-Colonel Alain Flegeau – SDIS 56
- Projet Capnet
Etude d'un réseau radio autonome en énergie pour capteur de différentes natures
Réalisation d'un démonstrateur associé à un simulateur
Ex : zone portuaire, algues vertes
Mr Dominique Jutel – Eryma

- Retour d'expérience sur des sinistres en zone portuaire et maritime
Méthodologie, gestion des données et information
Présentation d'interventions
Capitaine de Corvette Celton – Marins-Pompiers de Brest
Capitaine Daniel Mear – SDIS 29
- Le risque biologique en atmosphère d'intervention
Professeur Dominique Haras - Université Bretagne Sud
- Approche globale des risques en zone portuaire
Mr François Hissel – Centre d'Etudes Techniques Maritimes Et Fluviales
- Rôle des SDIS dans la sécurité portuaire
Mr Cedric Boussin – SDIS 29
- Suivi des équipes d'intervention, géo localisation
Mr Cyril Ray – Ecole Navale

Public

- Institutionnels : Conseil Régional, Conseil Général, mairie
- Enseignement supérieur, universités, grandes écoles : Université de Bretagne Occidentale, Université de Bretagne Sud, Université de Nantes, Ecole Navale (IRENav)
- Organismes publics/centres de recherche :
 - CETMEF,
 - SDIS 29, SDIS 44, SDIS 56, SDIS 37, SDIS 72, SDIS 85
 - Marine Nationale, Hôpital des Armées
- Entreprises : EDF, E.Leclerc, Véolia, RoEx, CSF, Eryma, ECA, Réparations navales, Thales, Altair Environnement, France PSI, Bertin, Digipictoris, Safran (Sagem), Exco.
- Assistance et sauvetage en mer : Abeille Bourbon, SNSM
- Presse : Journaliste
- Délégation étrangère : Institut Maritime (Québec), Cetemar (Espagne), Maroc, Mauritanie, Russie.

Organisateur

Le Lieutenant-Colonel Hervé Mahoudo – SDIS 29

Le colloque et les présentations dans le stand se sont très bien passés. Beaucoup de contacts ont été pris dont pour certains des propositions concrètes dans le domaine d'échange, de développement et de recherche concernant la plate-forme « SécuRévi ».



MITs – Information & Communication Technologies for Maritime Safety

ORGANIZATION : The Research Institute of the Naval Academy IRENav, the Brest Iroise Sciences Park TBI, the Schleswig Holstein maritime cluster KiWi, and the Technopôle Maritime du Québec TMQ.

TIME : Friday 13th May (8:00 am -10:30 am)

LANGUAGE : English

TOPIC : Numerous works are being carried out by the IMO, IHO, the European Commission, space agencies on the use of ICT for enhancing the quality and security of maritime transportation, and more generally maritime activities. Thanks to a continuous optimization of digital charts, telecommunication systems and surveillance/observation networks, the “e-navigation” and “e-maritime” concepts become realities, contributing to noticeable reduction of risks, of energy consumption, as well as to optimize the management of fleets, roads, cargos.

The workshop aims at inducing exchanges on last advances in the field and on possible cooperation axis.

CONTACTS : Cyril RAY **IRENav**, Ray@ecole.navale.fr
Yves VOURCH **TBI**, yves.vourch@tech-brest-iroise.fr
Niko von BOSSE **KiWi**, vonbosse@wtsh.de
Laurent BELLAVENTE **TMQ**, l.bellavence@tmq.ca

Chairman: Pr. Cyril Ray – French Naval Academy – GIS department.

Co-Chairman: Dr. Mohamed Abousalem –Chief executive manager of Tecterra - Canada.

Animated by: Fabienne Vallée Science park Brest Iroise.

PROGRAM

Keynote speech

Dr. Mohamed Abousalem –Chief executive manager of Tecterra – Presentation of the Canadian network of geomatics – Call for cooperation.

9.00-10.30 safety of navigation

- M. Ruy –LUXSPACE (Excused) – Satellite AIS Current works and future perspectives.
- M. Pierre-Yves Martin - CETMEF -“e-navigation” and AToN for safer seas.
- Pr. Cyril Ray - French naval academy; GIS applied to e-navigation & maritime safety”.
- M. Rafal Golarski - GeoVS - benefits of 3D-enabled VTS, pilotage and navigation technologies for maritime navigation safety.
- M. Stephane Real- Seareka – A new SAR technology based on a private man to ship communication.
- Pr.Tianhao Tang - Maritime University of Shanghai “e-navigation, e-maritime and energy saving techniques.

10h30 11h00 Coffee break

10.30-11.45 Integrated surveillance and observation networks: status & trends

- Pr. Paulo Dia- University of Porto –Maritime surveillance networks- R&D / works with NATO & EC.
- Pr. Alexandre Baussard - ENSTA Bretagne– HF / X bands radar for surveillance & ocean monitoring.
- Matthias Kniepoff–HELZEL GmbH-Over the horizon radars- Meteo-oceanography & maritime surveillance

11.45 - 12.15 Discussions and Conclusions

2. SYNTHESIS OF THE PRESENTATIONS

2.1 TECTERRA AND THE MARITIME APPLICATIONS OF GEOMATICS

Tecterra is the Canadian network of geomatics; it groups together private companies, mainly from the IT, energy and environment sectors, and research centres. Tecterra works as a cluster. It organises calls for proposals which can be either application oriented (driven by the industry) or research oriented (driven by the academic sector) as Tecterra works in strong cooperation with GEOIDE and MAGIS the French and Canadian networks of Geomatics and would like to establish cooperation with the European poles of competencies and clusters.

2.2 SAFETY OF NAVIGATION

Mr Luis – Luxspace – Excused- was supposed to present a new technology that would at term replace the long range LRIT system. The “Satellite AIS” makes use of the AIS frames, what enables seamless integration in current surveillance networks.

Mr Pierre-Yves Martin from the CETMEF has presented then the concept and use of AtoN (Aid to Navigation); real or virtual buoys using AIS (in future Sat AIS) to send information on dangers. Future use is under study.

Pr. Cyril Ray - French naval academy; made a quite complete overview of the multiple use of Geographic Information Systems applied to e-navigation & maritime safety. GIS and AIS are basis for improving routing, detecting abnormal behaviours, for avoiding collisions...

Another application of ICT and models was presented by Mr Rafal Kolanski. The company develops user friendly 4D simulations and applications to port accesses. The company works with the research centres such as French Naval Academy.

The conclusion has been made by Pr. Tianhao Tang , professor at the Maritime University of Shanghai who presented an overview of French-Chinese works on “Maritime ITS”, and their evolution from “Maritime Intelligent Transport Systems (e-navigation and e-maritime) to other sectors such as marine energy.

At last the presentation of M. Stéphane Real from the company Seareka is also provided. The company has developed a new SAR technology based on a private man to ship communication, avoiding the multiplication of false distress signals.

2.3 INTEGRATED SURVEILLANCE AND OBSERVATION NETWORKS, STATUS & TRENDS

Pr. Paulo Dia- from the university of Porto, presented the status and perspectives of their works on “Integrated maritime surveillance networks” that make use of advanced communication protocols and interfaces with the multiple sensors to provide complete views of the situation to the operators of maritime safety and security. UPT works with NATO and the European Commission on current and future surveillance systems.

Pr. Alexandre Bausard’s presentation (ENSTA Bretagne) deal with the evolution of HF / X bands radars for surveillance & ocean monitoring, addressing in particular the evolution of HF techniques to the detection of small targets.

Matthias Kniepoff’s presentation was a response to these research activities. The company HELZEL develops over the horizon radars which are already deployed in more than 40 sites. Meteo-oceanography is the first application - the models are developed by the company Actimar- but there is a demand for maritime surveillance.

3.DISCUSSION AND CONCLUSION

Cooperation axis and projects ideas have been set out through the final exchange time:

1-In the broad field of Geomatics (Geo-referenced applications & associated techniques): a web tool (a page) will be developed jointly between the science park Brest Iroise and Tecterra to provide information on European and French/Canadian funds, calls for proposals and respective activities to facilitate cooperation between their members.

2-In the field of “e-navigation”, proposals related to:

- a. The development of models for port approaches and e-navigation with AtoN, making use of IP based wireless networks as a complement to VHF.
- b. The use of routing models and satellite AIS to provide long range e-navigation services.

3-In the field of surveillance networks and techniques :

A wish to combine works of UPT, ENSTA and Helzel to provide advanced surveillance means (eg for offshore exploitation sites).

We thank all participants for their active participation to the workshop and following discussions. An update of the web site “MITS” will be studied to provide a mean for the working group to continue its exchanges.