



GUEST Françoise Gaill, Emeritus Research Director at CNRS

▶ p.2



“
The Ocean: a potential for
new resources and activities
”

▶ SEA EXPLORER

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THE WORD OF EXPERT

Éric Banel, General Delegate for french Shipowners

▶ p.3

NEW

« Initiative PME
Vehicules and
transports 2015 »



▶ p.3

UNDERLINE PROJECTS

- > Optiroute
- > PNSAP
- > NEMO

▶ p.5

AGENDA

MEETING OF CORICAN
17th FEBRUARY 2016
from 10:00 am to 12:30 pm



“The revival of
Sailing propulsion”

MEDDE
Auditorium Tour Séquoïa
(place des Carpeaux)
Paris La Défense

FOCUS

« Satellite applications
in the maritime
domain »

▶ p.6

CURRENT ISSUES OF CORICAN

« Europe group »
launched at CORICAN

▶ p.7



GUEST

FRANÇOISE GAILL, EMERITUS RESEARCH DIRECTOR AT CNRS



Françoise Gaill,
Research Director at CNRS

the CNML (national council for the sea and coast), genuine « parliament for the sea » was created, but it will still need to demonstrate its capacity to be heard by public authorities like the COMER. Other initiatives have also been launched, including the CORICAN (Council for the Orientation of Research and Innovation in Shipbuilding and Naval Activities) in 2011. In a « threatened marine ecosystem », promotion of eco-efficient « vessels for the future » is absolutely essential, especially in view of the fact that 90% of world trade is transported by sea. The efforts made by the French naval industry, very active in this field, can be commended.

Oceans also provide huge potential in terms of riches and new economic activities, particularly for France, ranked second in terms of global maritime territory. As an example, France has been granted a permit for polymetallic sulphurs at 3,400 metres under the sea, along the mid-Atlantic ridge. These sulphurs are rich in copper, zinc, lead, cobalt, silver and gold, while land-based deposits are becoming depleted. But these abyssal depths are also home to unique ecosystems made up of rare species often unknown to science, which can be impacted by mining. There is a clear risk that these human actions will modify the physical and chemical characteristics of this environment.

“
OUR APPROACH IS TO
INTEGRATE THE OCEAN
INTO THE SCOPE
OF NEGOTIATIONS
ON CLIMATE
”

The French naval industry is at the forefront of innovation for exploring new extraction procedures of these marine resources. The issues involved in exploring the deep-sea couple responsible industrial exploitation with the preservation of ecosystems, be they vulnerable or not. As shown by a recent collective expertise led by the CNRS (French National Centre for Scientific Research) and the Ifremer (Research Institute for Exploitation of the Sea), preserving habitats and the species that depend on them is an issue that must be one of the priorities in terms of actions taken in these environments. This is also the type of « sustainable exploitation of the ocean » message that will be endorsed during the COP21 in the context of sustainable development and protection of biodiversity. Training public and private decision makers and making them aware of the challenges facing the world's oceans is an exciting task when knowledge is considered as an element in the development of international issues. These issues must be both addressed and taken into consideration if the COP 21 is to be a success.

www.ocean-climate.org/ / www.developpement-durable.gouv.fr

The ocean has an essential role to play in the COP21, set to take place in December 2015 in Paris. We are working towards this with the Ocean and Climate platform, initially created from an alliance between non-governmental organisations and research institutions, supported by UNESCO, as at first, coverage of the ocean theme was neglected. This Climate and Ocean platform has been expanded to include a large number of figures involved in the maritime sector, including associations made up of businesses and elected officials. Our approach is to integrate the ocean into the scope of negotiations on climate and to contribute to successful negotiations for an ambitious agreement during the COP21. The Paris agreement must take the ocean into account and the role it plays in the climate system.

All too often the importance of the ocean on a global scale is forgotten, as well as the decisive role it plays in the climate system. The ocean covers 70% of the globe's surface, absorbs 25% of CO² emissions released by man into the atmosphere every year, produces 50% of the oxygen we breathe and stocks 90% of the surplus heat generated by greenhouse gases.

But how much longer will the ocean play the role of carbon pump? It is still too early to say, but scientific results show that the ocean is also changing. The warming of the atmosphere automatically results in a temperature rise in salt waters. The ocean is dilating and water levels are rising, even more so as the melt rate of icecaps is increasing. Models expect an increase of one quarter of a metre by the end of the century, with a maximum of more than 80 centimetres, with a number of consequences for people and their environment: erosion, submersion, subsidence and even the disappearance of islands. Also, 50% of marine species living in coral reefs could have disappeared by 2050.

This warning bell must incite us to take action! As early as 2009 with the Grenelle for the Sea, the State called for sea and maritime themes to be put back at the heart of public policies. As a consequence,



More informations: www.corican.fr

NEW SME INITIATIVE VEHICLES AND TRANSPORT
SEPTEMBER 2015 EDITION

Following the success of the SME Initiative 2015 that enabled 40 projects to be financed including five in the naval industry, a second edition of the SME Initiative action was opened on the 28th September 2015 to accompany and strengthen the innovative capacity of SMEs in the road, rail, maritime and waterway transport sectors. This initiative provides funding to co-finance targeted research and development projects,

and help accelerate development and deployment of technologies and uses of innovative mobility.

The scope of the Initiative covers technologies and services for maritime and waterway movements of people and/or merchandise (commercial boats and vessels for transport, work, surveillance or leisure).

The selected projects of a minimum of 400,000€ will receive financial support of

up to 200,000€ per project in the form of subsidies. An amount of up to 5,000€ can be added for result optimisation.

Closing date for the initiative:
3rd december 2015

Contact: philippe.cauneau@ademe.fr
Source: ADEME

THE WORD OF EXPERT

ERIC BANEL, GENERAL DELEGATE FOR FRENCH SHIPOWNERS



Eric Banel, general delegate
for french Shipowners

ship-owners, this is also a political choice for us as by focusing on improving quality and modernising the fleet, we intend to set ourselves apart from our main competitors. This double equation can be summed up in one key word: innovation.

What is the French Armateurs' conclusion concerning the entry into force of the sulphur directive in January 2015 in the SECA zone?

We had asked for more time and were given this time, not by politics but due to the decline in petrol prices. It is today's market situation that makes it possible for our businesses to manage smooth energy transition. My belief is that we must make the best use of this respite to start using liquefied natural gas (LNG) and make the necessary investments, both for vessels and ports. In this context, our main concern is financing vessels as French banks have largely withdrawn from our investments. This is why at the last Interministerial Committee for the Sea we fought to obtain the loan warranty extension for vessels built in France by French shipbuilders. This is obviously a win-win situation for French shipbuilders and shipyards.

In what way is maritime transport adapting to environmental issues?

Maritime waterways are the principal vector for trade globalisation. They provide 40% of intercommunity exchange and 90% of global exchange. However at the same time, thanks to the efforts made over the last ten years, shipping only represents a very small proportion of total CO² emissions. From 2007 to 2012, this percentage dropped from 2.6% to 2.1%, while international traffic increased by 14% over the same period of time. Now more than ever, shipping is the cleanest mode of transport per tonne transported, with for example five times less CO² emissions.

With a view to the COP21, this observation is not an excuse for doing nothing. On the contrary it encourages us to go further and to continue our energy transition. Improving vessel energy efficiency is first and foremost an economic necessity to control costs and remain competitive in a context where freight rates are generally very low. But as French

What are the main technological developments currently underway in the maritime transport industry?

Innovation is the solution. It is taking place everywhere on vessels: new propulsion methods, innovative ballast water treatment systems, new bulbous bows, systems for recovering oil in the event of shipwreck ("Fast Oil Recovery Systems"), prevention of collision with cetaceans, waste water and solid waste treatment for zero discharge, etc. New vessels launched by CMA-CGM or Louis-Dreyfus Armateurs, similar to the Bougainville, such as the Léopold LD, are among the best examples. Take bulbous bows for example: developed by French savoir-faire, they significantly reduce fuel consumption and consequently CO² emissions.

Among all these innovations, Liquefied Natural Gas (LNG) can be considered as a major development. This new fuel eliminates sulphur emissions and reduces emissions of nitrogen oxide, particle and CO². It makes it possible to respect current regulations and to prepare for those to come in future years. It also represents a sizeable challenge for the port community as in order to **exploit the full potential of this fuel, the logistics chain needs to be entirely adapted.**

These developments are at the core of the maritime economy, in unison with the naval industry. They bring together the expertise and know-how essential for our international influence. They are firmly focused on the future, as are French shipbuilders and France's maritime economy.

“
SHIPPING ONLY
REPRESENTS A VERY
SMALL PROPORTION
OF TOTAL CO²
EMISSIONS
”

As for the extension of the "clean ferries" call for projects, this should benefit Mediterranean shipbuilders, who will be subject to the regulation on sulphur in 2020.

www.armateursdefrance.org

INTERVIEW

KARINE CLAIREAUX, SENATOR-MAYOR OF SAINT-PIERRE-ET-MIQUELON PRESIDENT OF CNML OFFICE



Karine Claireaux, Senator-Mayor of Saint-Pierre-et-Miquelon

What is your initial assessment as president of the CNML board?

I was elected in November 2014 and my first months were dominated by the reinstatement of the CNML which will take on a new legal form. The new decree governing the way the council functions will reinforce its operational nature, in order to better fulfil its role providing suggestions and advice to the Government. The role of the CNML leading consultative bodies in the sea and coastal sector is also being reinforced. The reinstatement of the Council will also be the opportunity to enter a new phase of dialogue on national strategy for the sea and coast (SNML), eagerly awaited by the French maritime community. We also need to address the strategic subject of implementing the planning of maritime space which is the subject of a recent community directive.

In what ways are the naval innovation themes, advocated by the CORICAN, taken into consideration by the CNML?

These themes are taken into consideration via the COMER, a specialised committee within the CNML for research and innovation. The COMER, presided by Françoise Gaill, has had a number of meetings since its creation and its work will be widely adopted in the national sea and coastal strategy currently under development. Naval innovation is a particularly important theme for the national maritime community. As France has seen its maritime space increase by close to 500,000 square kilometres, tremendous opportunities are opening up: seabeds are brimming with riches waiting to be harnessed (polymetallic nodules, hydrothermal sulphides...) and will

require the development of ambitious technical solutions adapted to this environment.

As a representative of a French overseas department, do you consider new activities at sea (sea energies, harnessing seabeds...) as a challenge or as a threat to the environment?

It is a challenge but most of all a tremendous responsibility. With the increase in our maritime area, France has a huge environmental responsibility and needs to reconcile economic use of seabeds with respect for the environment. The course of action for the development of seabeds needs to be based on the three pillars of sustainable development (economic, environmental and social).

“ THE CNML IS A PARLIAMENT OF THE SEA ”

As the COP 21 opens, all these new ocean energies are a genuine opportunity, especially in terms of the objective for reducing CO₂ emissions. Research and innovation in the French maritime industry are undeniable assets and we know that French industrialists are

actively working in conjunction with the State on these issues. The Worldwide Innovation Challenge has identified the development of marine resources as one of France's eight strategic ambitions. This challenge, through its different phases, makes it possible to find innovative solutions for enhancing the value of submarine metallic minerals, as well as more effective solutions for seawater desalination, with a reduced environmental and energy impact.

Can you talk about one of the innovative maritime projects currently under development in Saint-Pierre-et-Miquelon?

There was a wind power project in the archipelago with eight old-generation windmills, but it was not well-adapted and had to be dismantled. However, due to the force and constancy of winds and currents, the two main islands are suitable for developing marine energies. The fact that Canada is very close (25 km) makes it possible to consider energy exchanges; it needs to be a modular project in order to avoid the difficulties encountered in the first unfortunate experiment. Elected officials and local residents of the archipelago are waiting for a project like this and will support it. Expectations are high for these green energies in overseas territories, especially for solving key issues on energy autonomy.

NATIONAL COUNCIL OF THE SEA AND COAST (CNML)

> Established in January 2013, the CNML was designed from its origin as a genuine «parliament for the sea» with the obligation to provide advice and guidance and contribute to the implementation of government decisions in the maritime and coast domain. It is chaired by the Prime Minister.

> Taking over the missions of the former national coastal council, its powers have been extended to the sea and overseas. Its composition reflects the different components of the maritime world (public institutions, trade unions, employers and NGO) while giving pre-eminence to elected members, who by law make up half of the members (70 to date).

> The board is made up of 17 members and provides regular constructive work for developing national sea and coastal strategy

Contact: thierry.dusart@developpement-durable.gouv.fr (CNML)
More informations: www.developpement-durable.gouv.fr

UNDERLINE PROJECTS

OPTIROUTE Better flow at sea

Answer two key issues of maritime transport: energy consumption and vessel safety. Changing the routing software to mainstream: sea states and the behavior of ships to optimize navigation. Defining the optimum route of a ship minimizing its consumption, with the constraint to reach the finishing point at a specific time, drawing on wind effects, while avoiding areas where security can be critical.

Contacts: maxime.flauw@polemer-ba.com
erwan.jacquin@hydrocean.fr
More: www.hydrocean.fr/

Total project: 2 218 K d'euros
Which State funds FUI 20: 574 Keuros for a global fund of 1 180 k euros

Project start date: 2015

Expected results: 2018

Territory: Loire-Atlantique

Project leader: HydrOcean

Project certified by



PNSAP partial aerodynamic lift powered ship



For a new generation of rapid transport ships of less than 100 passengers: new phase of R & D sets new hull-propulsion system. These vessels levitation rely on the water the air and at the same time in order to reach very high speeds with significant fuel savings.



Total project: 423 K d'euros
Which funds PIA (SME Initiative 2015): 200 K d'euros

Project start date: 2015

Expected results: 2016

Territory: Loire-Atlantique

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astrid.guinet@ademe.fr
More: www.aavessels.com/

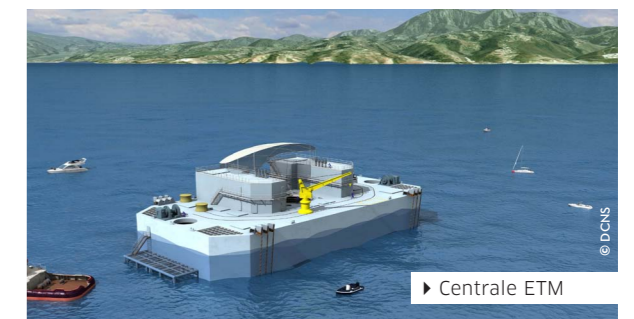
Project leader: Advanced Aerodynamic Vessels (A2V)

Project certified by



NEMO New Energy for Martinique and Overseas"

Development project of offshore thermal sea power plant of 16 megawatt which aims to exploit the temperature difference between warm surface water and cold water from the depths to produce a non-intermittent and carbon free electricity, without any uncertainty about the resource (access, availability, cost).



Total project amount: around 300 M €
NER 300 program (EC): 72 M€

Expected results: in 2018, 7 km off Bellefontaine (produced energy should supply about 35,000 households).

Territory: Martinique

Contacts: francois.duthoit@dcnsgroup.com
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Consortium: DCNS, Akuo Energy

More informations:
www.corican.fr



FOCUS TECHNOLOGIQUE

« SATELLITE APPLICATIONS: POTENTIAL USES AND INNOVATION FOR THE MARITIME DOMAIN »



► Satellite GIOVE du système Galiléo

In the context of Safer Seas, the international quadrennial event for Brest's maritime community, the workshop entitled "Satellite applications: potential uses and innovation for the maritime domain" was held on the 28th of October 2015. Organised by the CGDD's innovation sub-division and by CEREMA's technical division "water, sea and river", this event presented a number of projects.

This workshop, intended for figures involved in naval R&I, project leaders, large businesses, SMEs and VSBs, inspired rich debates and motivated all those who took part.

► **Contact:** charly.vignal@developpement-durable.gouv.fr

FOCUS

GNSS (Global Navigation Satellite System):

GNSS systems are value drivers estimated at 6% of Europe's GDP, and at 30% by 2030. The potential of activities dependent on information derived from GNSS is in constant progression.

Principal existing systems are:

- > GPS (U.S.A.), WAAS (U.S.A.)
- > EGNOS in conjunction with GPS (EU)
- > GLONASS (Russia)
- > BEIDOU (China)

The challenge for the EU for 2020/2021 is the development of European GNSS (EGNOS, GALILEO) that are interoperable with the GPS system, under civilian leadership.

This programme is headed by the European commission and represents a cost of 7 billion Euros between 2014 and 2020. The ESA (European Space Agency) grouping together 22 member States is in charge of the system's architecture.

Issues at stake for the maritime domain are the following:

- > Recognition of European GNSS systems by the International Maritime Organisation;
- > Definition of vessel security and safety requirements (positioning integrity) by those involved;
- > Standardisation and certification work for on-board systems on vessels.

► **Contact:** Galiléo - david.comby@developpement-durable.gouv.fr, delegate interministerial coordinator Galiléo

FOCUS

VDES:

Within the European Space Agency, a feasibility study has been initiated by Thalès Alénia Space on the VHF Data Exchange System (VDES) modernizing the AIS (Automatic Information System) and presenting three approaches and three uses:

- > Institutional
- > Military
- > Commercial

The system meets the European Union's requirements for surveillance of its European maritime domain.

Frequencies associate with VDES norms are currently being adopted (November 2015) and the system will be operational in 2018. The implementation of this system will make it possible to benefit from reduced costs in relation to current systems.

VDES permits terrestrial and satellite communications.

► **Contact:** olivier.autran@thalesaleniaspace.com, Maritime observation and surveillance, Thalès Alénia Space

FOCUS

TRIMARAN:

Controlling maritime traffic, national sovereignty missions and maritime safety are all major issues facing France in the context of increasing maritime transport and "non cooperative" vessels. France has the second largest maritime domain in the world with 11 million square kilometres of EEZ (Exclusive Economic Zone).

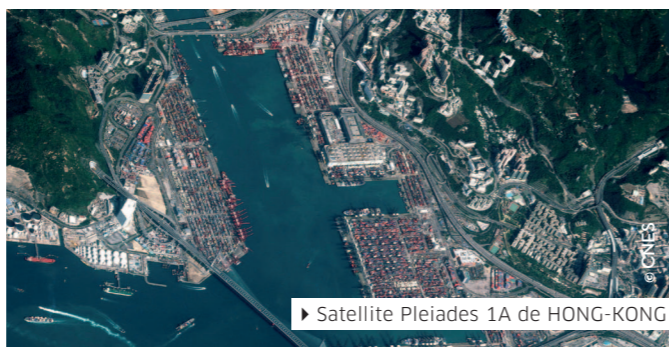
> **Advantages:** Surveillance of high sea, coastal and waterway areas in the EEZ using satellite resources (14 satellites, 7 optical appliances and 7 radars) represents an attractive complementary alternative to traditional limited "blind" means in terms of cost (State action at sea).

> **Territories concerned:** mainland France, French Guyana, French Antilles, Reunion, French Polynesia, Indian Ocean (Kerguelen ...), New Caledonia

> **Consortium:** French Navy, with CLS, Telespazio and Airbus Defence and Space

The project was initiated in 2013 and the first results obtained in 2015 (development of system interoperability (radar, optic, AIS).

► **Contact:** sebastien.badel@intradef.gouv.fr, Navy staff



► Satellite Pleiades 1A de HONG-KONG

CURRENT ISSUES OF CORICAN

TWO NEW ROAD MAPS FOR CORICAN

In accordance with technological developments and market access, new road maps were put forward and validated during the last CORICAN steering committee. Themes cover "fishing vessels" and "maretics".

Road map for « Fishing vessel of the future » The fishing industry will need to evolve over the next few years in terms of equipment (stock reconstitution, the move from an inherited, family based model to an industrial model). Close to 900 vessels are coming to the end of their service life. Only 35% of these will be replaced, meaning that there is a market for 400 new 16/24m vessels. This road map, drafted under the auspices of the CNPMM (National Committee of Maritime Fisheries and Marine Fish Farming) will work on different technological building blocks such as the multihull vessel, waste management, and hydrodynamics.

Road map for « Maretics » Maretics designates the whole range of electronic and IT systems used to manage and automate sea, river and port-based activities. This road map is led by Bertin Technologies and

will assess the impact of digital technology on the maritime world and its specific requirements. This is a legitimate approach as all activity sectors in the maritime industry will inevitably undergo extensive digitalisation.



► Arpège

“EUROPE GROUP” LAUNCHED AT CORICAN

As part of its role as responsible for defining and directing naval R&D and maritime technologies, the CORICAN has decided to create a "Europe" group, to federate French maritime industry expectations and bring them to a community level.

This group will act as a forum for debate on France's position at a European level, especially in relation to the Waterborne Technology Platform. Other community bodies in charge of transport or R&D will also be involved. This group will be run by STX (Pierre Berseneff and Stéphanie Klein) and coordinated by CEREMA

► **Contact:** jean-baptiste.de-francqueville@developpement-durable.gouv.fr



THE FRENCH CORICAN COMMITTEE OF 17 SEPTEMBER 2015



PREPARING THE STRATEGY 2016-2017 OF CORICAN

The last committee has validated CORICAN's strategy for the upcoming two years. It will be presented to transport and industry French Ministers at the next board, at the beginning of 2016. This strategy will include the following three axes:

1) OPENING UP TO EUROPE AND INTERNATIONAL

- > Launching of a CORICAN European group
- > Implementing MEET at European level
- > Establishment of a European strategy

2) TRENGTHENING LINKS WITH OTHER YACHTING, WATERWAYS AND FISHERIES INDUSTRY

- > By organizing events about sail propulsion, waterways or fisheries subject
- > CORICAN the roadmap about "future fishing vessel" developed

by the CNPMM

- > Promoting Research & Development projects in these areas and exchanging of informations
- > Assisting access to funding project and set up
- > Strengthening linkswith other areas (aeronautical, land).

3) RESEARCH & DEVELOPMENT PRIORITIES

- > Developing roadmaps and works already involved
- > Launching news axes (digital and numerical maritime application, fishing vessel, exploitation of the deep sea, ...)
- > links with the industrial plan "eco-ship"

CALL FOR PROJECTS

NATIONAL FUNDING

- > **RAPID scheme: Dual innovation support scheme by the directorate general of armaments (DGA)**
- ▶ Contact: dispositif.rapid@dga.defense.gouv.fr
Call open all year

FUTURE INVESTMENTS

- > **AAPFERRIES - Call for projects - Aid for investments for clean ferries** Closing date: 31st December 2015
- > **IPME Vdf - SME Initiative Vehicles and Transport Initiative**
Closing date for the initiative: 3rd December 2015 at 5.00pm
- > **AAP_EolFlo - Call for projects - Pilot farms for floating wind turbines (2015 edition)**
Closing date: 4th April 2016
- > **AAP_EMR - Call for projects - Renewable energies at sea and pilot farms for river water turbines (2015 edition)** 3 closing dates are possible: 25th January 2016, 19th September 2016 and 20th March 2017
- > **AAPIANAV15 - Call for projects Vessels for the Future (2015 edition)**
Closing date: 1st October 2016

- > **4th call for projects: Structural R&D Projects for Competitiveness**
Closing date: 14th January 2016
- > **PIAVE « Future industrial projects (PIAVE) »**
Closing date: 30th December 2015

TRANSNATIONAL AND EUROPEAN FINANCING

HORIZON 2020

- > Calls for the “Societal challenges” pillar
- > SME instrument, phases 1 and 2, calls 2016

For more information on call for projects and Advice:
Contact the Mer Méditerranée and Mer Bretagne



SAVE THE DATES

CORICAN NEWS

17th FEBRUARY 2016 - FROM 10:00 AM TO 12:30 PM

“The revival of sail propulsion”

At MEDDE - Auditorium Tour Séquoia - Paris La Défense

▶ <http://www.corican.fr/matinale-du-corican/>

SEA EVENTS OF COP21

FROM 30th NOVEMBER TO 11th DECEMBER 2015

▶ **More informations:** <http://www.cop21.gouv.fr>
www.corican.fr



PARIS2015
en accord avec le mandat
COP21-CMP11

SOLUTIONS21 - PAVILLON EAU-MER-FLEUVE

(GRAND PALAIS) - MARITIME & WATERWAYS PAVILLON

▶ **Planning of conferences, more informations:** <http://www.solutionscop21.org/fr/programme/>

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More informations: www.corican.fr

