



## YOUR NAVAL POWER, OUR CLIENTS ARE THE FOCUS OF OUR CONCERNS

Our new claim, the theme of an outstanding 2016, emphasises our priority: to mobilise our finest expertise and technologies to satisfy our clients' needs.



SEEING THE WORLD DIFFERENTLY -P. 06

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Annual corporate and social responsibility report 2016

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HERVÉ GUILLOU CHAIRMAN AND CHIEF EXECUTIVE OFFICER

## "COMMANDING OUR PROJECTS AND INVESTING IN PROFITABLE GROWTH"

"2016 stood out for two symbolically significant events for the Group and its 13,000 staff members, which illustrate two of our strategic priorities. The first was being **selected by the Australian government in April** to renew its submarine fleet. This major success powerfully acknowledges our staff members' talent and France's ability to bring together a team with both outstanding industrial and political credentials focused on a single objective. The inter-State agreement signed at the end of December in Australia seals the partnership between our two countries for several decades. Our planned long-term presence in Australia further demonstrates our commitment to grow our industrial activity on the international stage.

The second major event in 2016 took place on **16 December and concerned the setting up of our DCNS Energies subsidiary,** in partnership with Bpifrance, Technip and BNP Paribas Développement. This new industrial player with global ambitions will be focusing on the industrial and commercial development of three MREs (marine renewable ener-



2016 WAS A KEY YEAR IN THE GROUP'S TRANSFORMATION." gies) for generating electricity. These are: wind turbine energy, thermal ocean energy and floating wind turbine energy. The new company has set itself the goal of making these three energies industrially viable.

Apart from these two outstanding milestones, 2016 also saw the first concrete results of our Progress Plan. We delivered a multimission FREMM frigate to the French Navy and two LHD (Landing Helicopter Dock) ships to Egypt on time and on budget. We also floated out another FREMM and Gowind® corvette which, for the first time, featured the single PSIM (Panoramic Sensors mast and Intelligence Module). In addition, preparations were made for the mid-life overhaul of the Charles de Gaulle aircraft carrier programmed for 2017, assisted our Indian client with taking the first Scorpene® submarine produced entirely by technology transfer to its maximum operational diving depth, connected the most powerful tidal turbine in North America to the Canadian electricity grid, completed equipping the Le Triomphant ballistic missile submarine for the M51, successfully test fired the new F21 heavy torpedo and beat all nuclear attack submarine fleet availability records with over 1,000 days at sea!

Our teams are justifiably proud of their success and commitment to our clients. As demonstrated by the **economic and financial results**, we have reached our current operational targets thanks to the smooth running of our key programmes, particularly with regard to fleet maintenance, FREMM



and Gowind<sup>®</sup> programmes, as well as the infrastructure and civil nuclear programmes.

In October, during the 25<sup>th</sup> Euronaval exhibition, the Group revealed its new baseline: Your Naval **Power.** This reflects the strategic character of our twin missions' strategic character - completely and entirely satisfying our clients by providing them with the naval systems needed to preserve their vital interests, while also making the expertise and technologies drawn from our naval activities available in the fields of renewable energies. DCNS forges close ties with its clients via longterm partnerships, resolutely committed to anticipating their needs and fully satisfying them by its operational performance and technological superiority. In the context of ever keener competition and accelerated innovation cycles, involving farreaching transformations in the way our products are designed and sold, DCNS is maintaining its ambitious growth targets. This will allow it

to both control its operational results and generate the means needed to main-

tain our industrial

## TARGETS FOR 2017

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1. Respect our economic commitments.

2. Reduce the number of occupational accidents involving sick leave.

3. Save €78 million in purchases

4. Reach an agreement on organising work time

5. Keep programme costs and quality under control.

6. Win an export contract for surface ships.

7. Australia: to secure the industrial prime contractor

8. Win the contract for developing intermediary-sized frigates

9. Forge two major industrial partnerships outside France.

10. Put forward a competitive submarine offering for export markets.

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resources and offerings at peak efficiency and invest in profitable growth.

DCNS has committed its essential assets to a number of large-scale projects. Backed by its outstanding skills and the support of its shareholders, we are determined to provide our clients with the best possible service."





# ANTICIPATING MARKET EXPECTATIONS

The Group's future development, combined with greater profitability, depends upon an ability to decode and anticipate shifts in international clients' needs. DCNS' current success has been built on thorough familiarity with its markets and attentiveness to clients' evolving needs.

In 2016, DCNS developed its ability to anticipate shifts in the international defence market; the Group focused its attention on areas where demand is growing: Asia-Pacific, the North Atlantic and South America. It can also meet the demands of countries wishing to involve their national industries in shipbuilding projects. Furthermore, it has continued to incorporate technological innovations into its international offerings while at the same time limiting the risks associated with technology transfers. International naval defence markets are currently growing steadily, together with swiftly evolving client expectations. These changes have been brought about by several different factors: changes in the perception of perceived threats (particularly with the emergence and re-emergence of major naval powers such as China and Russia), changes in needs and military capacities, transformations in national industries, nations' respective budgetary situations as well as the development of new technologies. Furthermore, the competitive environment is becoming keener: new players are raising their profile on the most dynamic markets (such as China, Korea, Japan and Russia). In some sectors, these newcomers are cutting their prices. To anticipate shifts in market expectation and counteract the risk of competition, DCNS has

modified its client approach and portfolio of offers to meet current demands while at the same time improving economic performance.

For example, there are currently several countries interested in creating or expanding submarine forces. This trend creates a double opportunity for DCNS due to its internationally recognised expertise in antisubmarine warfare, either in terms of its submarines' operational quality or of its surface ships equipped with antisubmarine systems.

DCNS has therefore developed its activities in areas where these demands are particularly strong. Asian markets have been buoyant in this field for several years, in particular, Singapore, Malaysia, Vietnam, Indonesia and Bangladesh have begun to build up submarine forces. Very soon, the Philippines, Myanmar and Thailand will also be involved. For its part, Australia decided to launch an ambitious submarine renewal programme and found in DCNS a partner capable of meeting its requirements: perception of the Chinese submarine threat is contributing to the growth of naval defence markets in Asia. In the North Atlantic, the renewed activity of Russian forces is raising defence concerns in Norway, Canada and the Netherlands, stimulating a demand for submarine countermeasure capabilities. In industrial terms, DCNS is >>>





#### SMX<sup>®</sup> 3.0

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First shown to the public at Euronaval, this new submarine concept ship is adapted for Generation Z, which will be commanding ships in 2025. Onboard 3.0 technologies will offer improved energy control, unequalled operational performance and upgradable systems to make ship servicing easier.



#### DRONES

Apart from DCNS' own work on these organic warship systems (14<sup>®</sup> Drone naval mission system for deployment and recovery from a warship and D-19 submarine drones), the Group began working with Airbus Helicopters in October to make preparations for the French Navy's future VSR 700 tactical rotorcraft drone system.



#### SIMULATORS

A demonstrator illustrating the potential use of virtual reality techniques on the FREMM platform for training and maintenance, capable of being deployed on all ships, was presented to the French Navy for the first time in July.



#### ENERGY TRANSITION

Our activities in renewable marine energy are now shifting from the R&D phase to the industrial phase, accelerated by the creation of our DCNS Energies subsidiary. Construction work on a tidal turbine assembly workshop at Cherbourg was begun in 2016; in Chile, the MERIC (Marine Energy Research and Innovation Centre) was inaugurated in June.

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#### SEE THE WORLD DIFFERENTLY

>>> taking into account nations' latest objectives as increasing numbers of them want to involve their national industries in shipbuilding activities. For example, Egypt and its Gowind<sup>®</sup> programme and India, with its Scorpene® fleet. Expectations with regard to ship design are also growing stronger, as is the case of Brazil for its submarines and Colombia for the PES programme. As a result, DCNS is designing its products to take these local demands into account by applying a modular approach to its ship design and incorporating technology transfer into its offering to make it relevant for this type of client. The Group has already met this demand for the Gowind® programme and will be making efforts in this direction for the BELH@RRA® frigates. Choosing the right local industrial partners, assisting them and perfectly managing all aspects of technology transfer are now key to winning new markets. Extending its industrial growth outside France is now a significant means of leveraging the Group's growth. Perfectly in line with our supplier policy and our national commitments, this kind of approach will pay significant dividends in terms of maintaining our industrial infrastructure in the long term.

As far as the technological field is concerned, DCNS is also keeping ahead of market shifts. For example, an increasing number of navies are looking to benefit from the expanded resources offered by the use of drones. DCNS is committed to incorporating these new capacities into its offerings and making them as operational as possible in military terms. DCNS is also meeting the challenges of digitising battlefields. The latest developments in network architecture make it essential for ships to have the calculation capacity required for them to have the means of visualising their environment in real time. With its BELH@RRA® frigate, DCNS offers a compact ship, capable of meeting the latest asymmetric threats and offering cyberdefence capabilities. Similarly, in terms of in-service support, DCNS has developed its i-maintenance programme. Based on the ship's digital heritage, i-maintenance makes it possible to more easily diagnose and forecast failures, as well as optimise repair time with the aim of achieving greater flexibility and maximum operational capacity.



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CYBERDEFENCE The Group designs

and integrates onboard cyberdefence systems, implementing its expertise throughout ships' entire life cycles to combat increasingly dangerous threats.



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#### FACTORY OF THE FUTURE

DCNS Research is stepping up its work around the factory of the future in partnership with research centres, academic institutions (Central School in Nantes, the Brittany ENSTA) and innovative SMEs. This mainly concerns two high potential industrial fields: additive manufacture and augmented reality. A pilot additive manufacture team is already in place to handle Group entities' immediate needs.

#### **3DEXPERIENCE®**

DCNS has selected the Dassault Systems offering for its upcoming development and processing tools; PLM (Product Life Management) and CAD (Computer-Aided Design).



#### **I-MAINTENANCE**

Shifting from preventive maintenance to predictive maintenance will make it possible to improve ship-use flexibility. Real-time equipment function data analysis will enable decisions to be made as to when maintenance should be carried out, even at sea: land-based experts will maintain contact with operators on board at all times.

Annual corporate and social responsibility report 2016

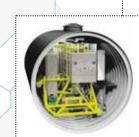
#### SEE THE WORLD DIFFERENTLY



#### COMBAT SYSTEM

In order for navies to reconcile increases in modern ships' functional capacities while maintaining the same number of operators on board, **R&D** studies carried out by DCNS teams and its partners are focused on approaches involving integration, simplification and automation to provide innovative man/ machine interfaces.





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AIP

DCNS is leading the Air Independent Propulsion (AIP) revolution, offering conventional submarines unprecedented operational capacity for staving submerged for several weeks at a time. DCNS has developed an AIP system based on FC2G (second generation fuel cell) technology for which the Group holds over 40 patents.

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#### VIRTUAL SHIP

The aim of this project is to increase overall behavioural knowledge of the ship to offer the best technical and economic configurations to our clients. The 2016 CEMT (Confederation of European Maritime Technology) prize was awarded to the fluid structure interaction simulation team.

## EXPERT OPINIONS

#### MARIE-PIERRE DE BAILLIENCOURT

SENIOR EXECUTIVE VICE PRESIDENT-DEVELOPMENT

## How is the world naval defence market changing?

It is changing in line with current threats, and therefore navies' needs to have the capability of meeting them. The asymmetric threats posed by terrorism or the emergence of potentially hostile regional, or even global, submarine forces are forcing nations to make a priority out of developing their antisubmarine warfare capacity and, when they have the resources, to acquire their own, highly efficient operational submarines

Generally speaking, we can see a renewed need for vessels capable of engaging in high intensity combat. The use of drones – in the air, on the ground or underwater – is also a capacity sought after by navies and a means of optimising available means. This therefore reveals a need for highly militarised, highcapacity operational solutions.

#### How is DCNS positioned on the market, and how does it stand out?

DCNS stands out by being able to offer front-line combatproven ships, its acknowledged expertise in high endurance, discreet submarines and heavily armed surface ships. The French Navy, engaged in several theatres of operations, is constantly demonstrating our ships' quality, for which we are grateful, in that this firmly establishes our shipbuilding credentials and contributes to our growth. Our ability to carry out fully controlled technology transfers in line with client policies is also a significant differentiating factor. More and more countries are wishing to be involved in the construction and also the design of their naval force as a means of underpinning their sovereignty. DCNS is the only shipbuilder capable of offering them the possibility of acquiring these genuinely integrated guarantors of sovereignty, i.e., to set up a genuine naval defence capability.

## What challenges did you meet in 2016?

seem to me emblematic of our product development, industrial growth and economic case of the Australian competition, DCNS stood out for its understanding of the client's needs and the way it provided a customised solution combining technological and long-term partnership. This has allowed the Group to reassert its benchmark positioning on the submarine market and sustainably RRA® frigate, DCNS has taken an outstanding digital and capacities and shipbuilding capabilities designed for both French domestic and



## BELH@RRA<sup>®</sup>, A FRONT-LINE DIGITAL FRIGATE

Designed for the French Navy and export markets, the BELH@RRA® frigate is DCNS' response to the demand for a powerfully armed, medium-sized warship. Expected by the navy within a very short timeframe, this first digital warship features a whole range of new assets. This is innovation designed to serve naval missions.



This medium-sized vessel, between that of the Gowind® corvettes (2,500 tonnes) and the FREMMs (6,000 tonnes), has been designed to meet strong demand on world markets.



The first digital ship The main innovations featured on the BELH@RRA\* concern the on-board IT centre, cybersecurity and i-maintenance. Management of the high-volume dataflow is provided by connected objects on board the ship. 2023

The year the first unit is scheduled to be delivered to the French Navy. FOCUS

"DCNS has designed the BELH@RRA® frigate for the French Navy, to replace the La Fayette-class frigates. By 2030, the French Navy aims to have 15 front-line frigates at its disposal, five of them BELH@RRA®-class ships, in addition to the eight FREMM multimission frigates and the two anti-aircraft frigates produced by our Group," explains Éric Chaplet, DCNS' Marketing Director. The BELH@RRA® has also been designed for export markets. Its tonnage complies with a high demand on world markets. In this way, DCNS aims to meet the needs of navies wanting to deploy a compact frigate operating in a wide range of action, alone or as part of a naval force. With the BELH@RRA®, the Group is hoping to repeat the success it enjoyed with the La Fayette-class frigates and benefit from the volumes this could generate.

#### A PROGRAMME ALREADY UNDERWAY

"In line with French requirements, BELH@RRA" is a ship featuring advanced military capacities in every field," continues Éric Chaplet. "This includes antisubmarine warfare, anti-aircraft and anti-surface combat as well as carrying out special operations and self-defence in every kind of situation to meet asymmetric threats. Although its tonnage is 30% lower than that of the FREMM vessels, BELH@RRA® offers very similar capacities, which can even be greater under certain circumstances!"

The French version of the BELH@RRA® will be equipped with next-generation radar, featuring four Thales Sea Fire® fixed panels, a comprehensive sonar suite identical to that used on the FREMMs, a high-performance armament system, including, in particular, ASTER® 30 missiles, the latest-generation SETIS® combat system and the ability to deploy and operate an aerial drone. "Cutting-edge equipment of this type gives us a very high-performance warship. Apart from DCNS' shipbuilding experience, the BELH@RRA® benefits from extensive operational feedback from the French Navy, which has used it in several theatres of operations. This provides clients with the guarantee of an operational ship benefiting from the expertise of a front ranking navy," adds Éric Chaplet.

A further asset offered by the frigate is the range of variants it can feature to make it more attractive on export markets. "This ship has been designed so that various options, such as different speed capabilities or crew sizes, can be offered without altering its basic architecture. This range of variables built around a common concept makes it possible to reduce non-recurrent costs."

#### **ON-BOARD INNOVATION**

"Furthermore, BELH@RRA® is a connected ship, evoked by the typography used for its name," stresses Éric Chaplet. Its built-in flexibility is a fundamental aspect of its design, enabling the new frigate to be adapted in compliance with current technological cycles which are constantly becoming shorter. Planning for comprehensive refits at the halfway point of a ship's operational life (every 15 years) is now a thing of the past. The BELH@RRA® has been designed to span several technological cycles. The necessity for cybersecurity has been taken into account from the outset. It offers those operating the frigate the capacity of remaining operational even in the face of new threats which, by their very nature, are constantly evolving.

On-board IT centres house the relevant equipment in powerful data centres where all the ship's major applications are virtually maintained and software updates are also managed. Maintenance is now predictive, based on parameters digitally monitored on board and on land, making it possible to know when and where action is required very swiftly, benefiting from previous experience acquired throughout an entire fleet. Innovation must serve operational missions!"

#### SEING THE WORLD DIFFERENTLY

## WINNING GLOBAL BIDS

How does the DCNS Group manage to win its clients' confidence in a keenly competitive environment? We demonstrate how via the example of DCNS India, our subsidiary, specialised in naval services.

On 24 November 2016, the Scorpene®-class submarine Kalvari, built in India by the Indian Navy, successfully carried out its first dive to its maximum operational depth. The first Scorpene® to have been entirely built via technology transfer, clearly demonstrates DCNS' capacity to steer an international programme in partnership with local players. Since 2009, DCNS India has been working with MDL (Mazagon Dock Shipbuilders Ltd.) on the construction of six submarines. The subsidiary has 60 staff members - including 45 Indians - some of whom have been trained in France to DCNS quality standards. Close ties have been forged with MDL: at the Mumbai naval shipyard, the DCNS India AOT (Assistance and Overseeing Team) provides technical support for the construction and trains MDL staff members in its expertise. Currently, as construction of the ships nears completion, MDL has acquired the technological and industrial skills to

A great success! In close collaboration with the Indian Navy, DCNS India's role in the P75 programme has rapidly expanded to include the manufacturing of submarine equipment. In line with the government's "Make in India" policy, DCNS India has steadily introduced the local production of equipment. In Hyderabad, this has resulted in the SEC company manufacturing

independently carry out submarine construction.

cofferdam doors, stops and weapons handling systems, while HBL has been involved in platform control systems and ships' bridge equipment.

Meticulously selected via a procedure involving audits and invitations to tender, and then trained to meet DCNS' quality demands, these local manufacturers have gradually become capable of independent production. In partnership with DCNS India, these companies have invested in their industrial facilities, improving their quality, project management and planning skills. They have become more competitive and have been able to win new markets. With this local production of equipment, DCNS India has contributed to developing a healthy industrial ecosystem, which will enable the Indian Navy to ultimately become fully independent.

In Mumbai, as the crew gradually becomes familiar with the *Kalvari*, the *Khanderi*, second in the submarine series, was launched on 12 January 2017 and will soon be starting its sea trials. The other four submarines are scheduled to be delivered at regular ninemonth intervals. In agreement with DCNS India, MDL has already made a proposal to the navy for the sale of three additional Scorpene® submarines incorporating additional operational capacities requested by the navy. This new order is essential for maintaining the naval expertise and skills of the shipyard and its partners. >>>





#### SSBN 1G

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In October, the DPA (Defence Procurement Agency) awarded the market for deconstructing the hulls of five Cherbourgbased first-generation Redoubtable-class SSBNs (ballistic missile nuclear submarines) to DCNS.



#### SSBN 2G

In November, DCNS received notification from the FSS (Fleet Support Service) that it had been awarded the ISS (In-Service Support) market for the four SSBNs based at Brest. This market, covering nine years (until 2025) will involve over 50 technical refits of M51 version Triomphant-class SSBNs.



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#### CANTO<sup>®</sup>

The Royal Thai Navy has once again placed its confidence in DCNS by signing two contracts for the Canto<sup>\*</sup> countermeasure system, using the revolutionary confusion/dilution principal to decoy torpedoes. Canto<sup>\*</sup> and its tactical Contralto<sup>\*</sup> system are already operational with the Thai Navy!

#### SEEING THE WORLD DIFFERENTLY

>>> In-service support of the Scorpene® fleet is another opportunity for DCNS India to work with MDL. Also delivered via technology transfer, the offer made by the two partners includes a proposal for replacement batches, setting up a combat system reference platform and a technical assistance contract to handle maintenance. The client is currently examining this proposal. Finally, DCNS India and the private Reliance naval shipyard have jointly answered an invitation to tender for the construction of two LHD (Landing Helicopter Dock) ships, which is also under study.

In partnership with the OpenHydro teams, DCNS India is diversifying its activities and working to promote renewable Marine energies in India. Two major projects are currently being developed: a tidal tur-

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bine farm off the coast of Gujarat State and a pilot ocean thermal energy farm off the Andaman and Nicobar Islands, which will make the archipelago energy self-sufficient.

In India, a strategically key area for its development, DCNS has demonstrated its ability to build longterm partnerships and win new markets. An inspiring story which is still being written!



#### SYLVER<sup>®</sup>

In June, DCNS was awarded a five-year renewable contract by MBDA for providing in-service support for the 149 Sylver<sup>®</sup> launchers used by 7 navies. A contract to supply A50 Sylver<sup>®</sup> launchers for future Italian Navy OPVs (oceangoing patrol ships) was also signed.



#### DCNS has won its first maintenance contract for a Brazilian surface ship: the Group provided maintenance for the former *Siroco* LCC (Landing Craft Carrier) renamed *Bahia* before its departure for Brazil. The success of the first overhaul was an opportunity for DCNS to demonstrate its flawless commitment to the Brazilian Navy.



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#### GROIX

The project, led by Eolfi Offshore France, in partnership with DCNS, GE and Vinci, won the Government's invitation to put forward floating wind farm pilot projects. This submission, backed by the Brittany Region, concerns the installation of a 4 wind turbine floating farm, which will be connected to the grid in 2020.

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#### SEEING THE WORLD DIFFERENTLY



#### SINGAPORE

Our DCNS Far East subsidiary has doubled its income over the last five years. The activities of this International Services Division's forward base are mainly focused on providing services for French, Singaporean and Taiwanese frigates, submarine inspection services using ROVs (Remotely Operated Vehicles) as well as the installation and maintenance of floating security barriers.

#### EXPERT OPINIONS

#### **BERNARD BUISSON**

MANAGING DIRECTOR OF DCNS INDIA

#### The *Kalvari* will soon be operational. What is your appraisal of the P75 programme?

It is a success! We have transferred construction of the Scorpene® submarines to MDL, whose expertise is now recognised by its client, the Indian Navy. By facilitating local production of the submarines' heavy equipment, we have contributed to developing the Indian Navy's competences. This has made it possible to develop a healthy industrial ecosystem, essential to ensuring the Indian Navy's selfsufficient ability to build submarines.

## What ties does DCNS India have with its Indian partners?

We have built up strong and sustainable relationships with our partners, who are major industrial players with a high level of expertise. By qualifying the suppliers involved, we have also extended our global supply chain. Flash Forge, for example, which manufactured quality lead pigs for the P75 programme, has supplied an order for the French Barracuda submarine programme.





#### SUCCESSOR

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In October, DCNS and BAE Systems signed a contract to supply equipment for the future British nuclear ballistic missile submarines as part of the Successor programme to renew the Royal Navy's strategic force. This success is built on the 16-year ongoing climate of confidence that exists between BAE Systems and DCNS.



#### AQUA VENTUS

The New England Aqua Ventus project, led by the University of Maine, which has DCNS as one of its partners, is working on developing a pilot wind turbine farm generating 12 MW off the coast of Maine in the USA. In May, the US Department of Energy granted it a subsidy of \$39.9 million, to be paid in instalments as each of the project's major milestones is reached.



## AUSTRALIA: THE KEYS OF OUR SUCCESS

In April 2016, Australia surprised the whole world by organising a competitive bid to decide which contender would be carrying out the largest contract for submarines ever put up for tender - and reaching a decision within a few months. This innovative, efficient and ethical process resulted in France and DCNS winning this important market. Marie-Pierre de Bailliencourt, DCNS Senior Executive Vice President, who led the "Australian campaign", reviews what led to this outstanding success.

February 2015: start of the competition between France, Germany and Japan.
November 2015: offers presented to the Commonwealth of Australia.
26 April 2016: DCNS selected.
30 September 2016: first operational contract signed, covering preparations required ahead of the submarine design stage.
2030: launch of the first unit.

**2050:** launch of the programme's last unit.





ocean-going submarines are to be built in Australia within the framework of the Australian Future Submarine programme.



working hours in France over a decade with an integrated team





FOCUS

"The first reason for our success is the relationship built on confidence that we were able to create with our client via our receptivity and detailed understanding of their expectations, particularly their need to be militarily operational and fully independent in terms of sovereignty. The consistency, credibility and expertise underpinning our message enabled us to put forward the validity of our proposals convincingly. This success illustrates the new direction the Group is now taking with regard to international growth: DCNS has been able to very swiftly update its approach to discussions with prospective clients, set up a master plan of its technology transfer process and mobilise all the resources needed to ensure collective success, covering the next few decades.

The second reason concerns our offer's intrinsic quality. For we have offered the best submarine in the region for operational capacity in the three key areas of acoustic superiority, operating range and ocean-going endurance. Furthermore, we were the most relevant in terms of directing complex programmes and interacting with Lockheed Martin - the selected American combat system integrator. We also emphasised our ability to mobilise and sustainably work with the Australian industrial ecosystem. Finally, France's commitment to a long-term strategic partnership which guarantees Australia's desired regional superiority and gives it, in the long term, the means of preserving its sovereignty by having command of its submarine resources played a key role in asserting our credibility.

#### A STRATEGIC AND COMMERCIAL SUCCESS

This strategic partnership was backed by all the French authorities involved, from the Ministry of Defence and the French embassy in Australia to the Elysée Palace, the Prime Minister's office, the Foreign Office and, from an operational viewpoint, the French Navy, the DGA and the SGDSN (General Secretariat for Defence and National Security). This led to an intergovernmental agreement being signed in December 2016. A series of visits followed, involving elected officials, delegates from social society (regions, chambers of commerce, business associations, economic hubs, research institutes, etc.). Our main industrial partners and suppliers also went to Australia, convincingly demonstrating French efficiency when focused on a project of this magnitude. All the delegations, political, industrial or military, which have been to Cherbourg since the Australian competition began, have been greatly impressed by our industrial resources, our workforce and engineers' mastery of core competencies and the close interaction we maintain with the French Navy, Armament manufacturers, fleet Support and all our suppliers. It is this single model of integration and sustainable ongoing improvement, despite the concentrated resources, which our Australian opposite numbers found so convincing.

The programme concerns the construction, in Adelaide, of 12 conventionally powered ocean-going submarines of some 4,500 tonnes each. The Australian budget devoted to this entire programme is more than AU\$50 billion. First deliveries of the vessels will be around 2030, with the last due after 2050. Since these submarines will be in service until 2080, this partnership will cover 65 years altogether.

#### **FRESH AMBITIONS**

Apart from the strategic and commercial success of the Australian programme, its scope and demands is a unique opportunity for DCNS to revamp its business model, building upon confidence in our technological models and the expertise of our staff members. The close collaboration with the Anglo-Saxons via this programme will also open up fresh perspectives. Serving the French Navy's mission of maintaining a constant presence on the high seas, DCNS works to maintain its sovereign skills, particularly in terms of underwater engineering, its industrial and technical defence base and its operational credibility, while at the same time protecting and making the most of its intellectual property. The reinforcement of our international presence, thanks to the critical role our DCNS Australia subsidiary is playing, further demonstrates our command of technology transfer and the viable economic transformation we are undergoing.

Our ongoing course of action is to meet our commitments methodically, entirely and calmly for, even if the challenges of this unique program are very real, the expertise possessed by DCNS and its partners are very much up to the challenge."



SITES



#### EUROPE AND THE MIDDLE EAST

16 NORWAY Representative office.

SITES

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17 POLAND Representative office.

18 GREECE Representative office.

19 EGYPT Representative office.

23 BRAZIL

24 CANADA

(100%).

by DCNS do Brazil);

DCNS do Brazil (100%); Projetos e Sistemas Navais SA (100% owned

Itaguaí Construções Navais (41%), submarine construction

(in partnership with Odebrecht).

DCNS Technologies Canada Inc.

20 UNITED ARAB EMIRATES Representative office.

21 IRELAND OpenHydro (62.4% subsidiary of DCNS Energies), design and production of tidal turbines.

22 SAUDI ARABIA DCNS Support (100%), operational in-service support.



#### AMERICAS

OCEANIA AND ASIA

25 COLOMBIA Representative office.

26 CHILI

Energia Marina SpA (100% owned subsidiary of DCNS Energies), renewable marine energies and offshore oil/gas in Chile and South America.



27 AUSTRALIA DCNS Australia (100%).

28 INDIA DCNS India (100%), technical support for local industries and shipyards.

#### 29 MALAYSIA

DCNS Malaysia (100%); Boustead DCNS Naval Corporation (40%), in-service support for submarines (in partnership with Boustead).

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**30** SINGAPORE DCNS Far East (100%), logistics and maintenance of naval and aero-naval systems.

31 JAPAN OpenHydro Technology Japan (100% subsidiary of OpenHydro).

32 PAKISTAN Representative office.

33 INDONESIA Representative office.

# AN ECOSYSTEM FOR CREATING VALUE

DCNS is a major player in France's naval sector, interconnected with its clients, staff members, industrial and academic partners to create value and contribute to the country's manufacturing excellence. We examine how the Group interacts with each one of its stakeholders to win new markets.



**CLIENTS** Creating a favourable context to meet their demands



PUBLIC BODIES AND INSTITUTIONS Involving them in decisionmaking processes, while taking local constraints into account



**STAFF MEMBERS** Frontline leveraging of company performance



UNIVERSITIES SCHOOLS Guaranteeing the expertise of current and future generations



SECTORS OF EXCELLENCE AND INNOVATION Staying in the forefront of technology to state our difference



SUPPLIERS Uniting them around

shared growth targets



MEDIA Creating a positive dynamic raising awareness and extending influence



MANUFACTURING PARTNERS Engaging in win-win cooperation

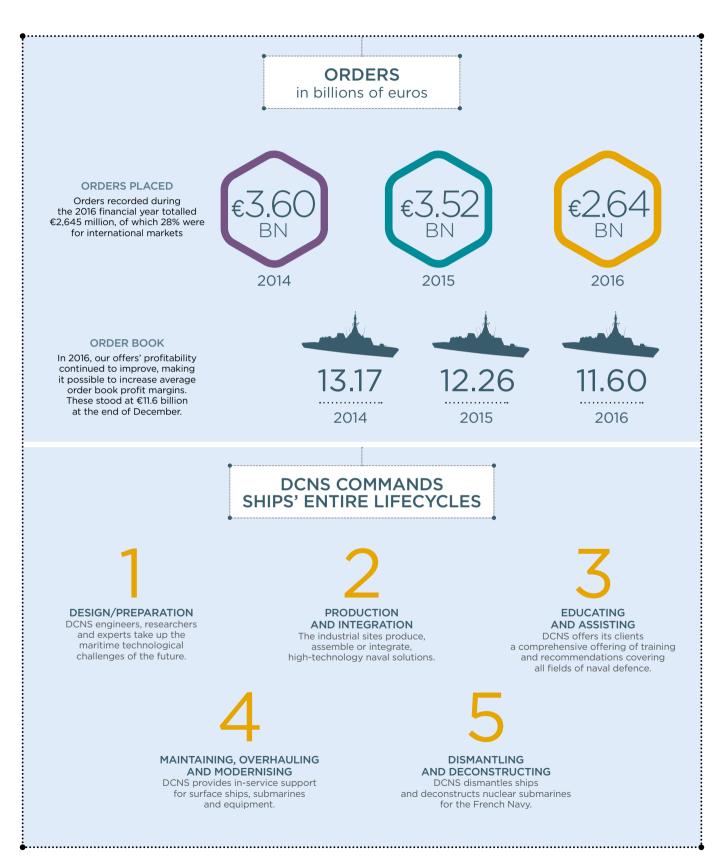
**SHAREHOLDERS** 

Fulfilling the missions it is

given while relying on their

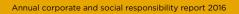
support and expertise

#### **BUSINESS LANDMARKS**









## OPERATIONAL PERFORMANCE SATISFYING OUR CLIENTS

DCNS programme performance in 2016 was outstanding, both in terms of new ship building and services. We review the Group's key assets in the way we serve our clients.

In 2016, the greater part of the new construction programmes went ahead on schedule, in line with performance targets and the budgets set at the end of 2015. As far as services were concerned, we reached a turnover of €1.25 billion. More than 30 ISS (In-Service Support) programmes are currently underway throughout the world. The dynamism with which our programmes were carried out in 2016, is due to several significant factors.

The first of these is structural: we are now getting the first benefits of the changes introduced in 2014 concerning the ongoing improvement of our procedures and our organisation as well as those relating to our manufacturing base.

The deployment of our forward base concept in the context of our ISS programmes demonstrates this very well. The idea is to double our support for forward French and international bases by having the means required to provide the required service, even when a long way from ships' home ports. These forward bases, located as close as possible to our clients' needs and supported by rear bases pooling their expertise, has made it possible to increase vessels' availability rate, in some cases, extending it beyond contractual undertakings. This enabled the nuclear attack submarines to mark up a record 1,000 days at sea in 2016. This quality of support has resulted from the collective work carried out by French Navy crews, the fleet support service, DCNS and its subcontractors.

Similarly, there has been a genuine cultural revolution sweeping throughout the Group since 2014, enabling us to change the paradigm when it comes to product design. Our previous approach was to provide a customised product for an initial client, followed by potentially long and costly adaptations for subsequent clients. We now take into consideration the design of all potential variations that could be demanded by future clients, as well as the complexity involved in carrying out technology transfers. This has led us to design ships with a large number of possible variations, an approach that results in significantly reducing costs when adaptations are required.

The second factor explaining our operational performance in 2016 is the human dimension: this concerns our teams' skills, capitalising on the expertise they have implemented and their dedication to serving our clients. Our teams' technical quality enables us to overcome successfully any issues we may encounter, despite the extreme complexity of the products we design, produce and maintain. For example, some of our international success results from the initiatives taken to professionalise



teams involved in technology transfer. This challenge, set some 15 years ago, has now been met as a result of the Group's collective experience. DCNS' prowess in this field was demonstrated in 2016 with the launch of the first Scorpene® submarine in India, the *Kalvari* and also by the delivery of the full specifications for building Brazilian Scorpene® submarines to our subsidiary Itaguaí Construções Navais (ICN).

Another example of this human factor is the teams' enthusiasm to meet clients' demands in terms of expected levels of performance. The partnership we have forged with Egypt is the clearest illustration of this, with the delivery of a frigate and two LHDs adapted to the needs of the Egyptian Navy in less than twelve months and the construction of a first Gowind® corvette within thirty-six months, a record! Our current model is unique. The highly diversified palette of ships we design, build and maintain involves an outstanding volume of skills and expertise which we preserve and develop on an ongoing basis in our employment catchment areas, both within the Group and among our suppliers. The moral contract that links us to our clients - guaranteeing the availability of the resources and knowledge required at the right moment - is thereby fulfilled.

#### **EXPERT OPINIONS**

#### NATHALIE SMIRNOV

VP SERVICES DIVISION



#### FREMM PROGRAMME

The FREMM *Provence* entered active service in June, three months after delivery of the *Languedoc*. Sea trials for the *Auvergne* began in September, coinciding with the float out of the *Bretagne*.

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#### GOWIND<sup>®</sup> EGYPT

The first corvette was floated out in September and the single PSIM (Panoramic Sensor and Intelligence Module) fitted to its floater. At the same time, over 120 people at the Alexandria Shipyard were undergoing training at the Lorient site.

#### BARRACUDA

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In 2016, several industrial milestones for the *Suffren* were reached: taking the rear battery on board, installing the helicon unit, final submarine junction, fossil vapour trials, start-up of the GES diesel engine and installing a mock-up weapon on board. Construction of submarines 2 to 4 are well underway.



#### SSBN 30

The results obtained during the brief pre-project design of the thirdgeneration ballistic missile submarine has made it possible to initiate the detailed pre-project phase (estimated to cover three years) at the end of 2016.

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#### LHD EGYPT

In June and September, DCNS delivered the two Landing Helicopter Dock ships acquired by Egypt in October 25, *Gamal Abdel Nasser* and *Anwar El Sadat*. Two teams of 177 people were trained by DCNS with support from our partners STX France and Défense Conseil International.



## ISS FREMM WORLD

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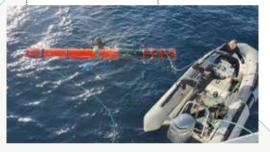
DCNS set up an organisation to meet the challenges of ISS for the four currently operational FREMM ships, which the three client navies involved were able to benefit from during the technical refits successfully carried out during 2016.



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The test firing of the new F21 heavy torpedo in December was a complete success, confirming the vehicle's reliability and manoeuvrability, making it possible to assess the torpedo's when attacking a submarine target.



## FOR THE M51 MISSILE

The acceptation launch carried out by the *Triomphant* in July was a success, while modernisation of the *Téméraire* began in October at Île Longue, with the crew handing the keys to DCNS for this major refit, scheduled to take 13 million hours.



DEDICATED At our Toulon and Brest sites, specific shipyards have been set up for specific ship types undergoing maintenance, for example frigates or attack submarines. These collaborative platforms will make it easier to oversee all aspects of the work in hand, from the client's initial demand to final acceptance.

#### CAPE SHARP

The most powerful tidal turbine in North America, a 2 MW OpenHydro machine, has been connected to the electricity supply grid. Cape Sharp Tidal, a company set up by Emera and OpenHydro, a DCNS subsidiary, lowered the tidal turbine to the seafloor on 7 November at the FORCE (Fundy Ocean Research Centre for Energy) site in only two hours.

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#### P75

On 24 November, the submarine *Kalvari* – the first Scorpene\* to have been built via technology transfer – carried out a first dive to its maximum operational depth. It will now follow its sea trial programme at the same time as work continues on the next submarines, the first two of which will be floated out in 2017.

#### PAIMPOL-BRÉHAT

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Following the immersion of the second tidal turbine in May 2016, operations connecting the two tidal turbines were carried out, followed by several operational tests. Environmental monitoring procedures showed that the submarine linking cable and the stabilising structures were in good condition.

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The aircraft carrier's mid-life major overhaul has been in preparation throughout 2016 at all Group sites. At Toulon, a 280,000 m² shipyard has been set up around the dry dock. Up to 2,000 people per day will be working there to meet the challenge of completing the work on schedule.

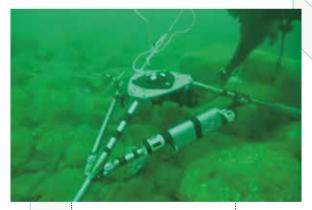


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#### MALAYSIA

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The intermediate maintenance availability of the *Tunku Abdul Rahman* submarine took place in 2016-2017. It was a fine example of competence transfer with greater participation from Malaysian teams working for the BDNC joint subsidiary.





DCNS is actively continuing its studies for the setting up of a pilot tidal turbine farm in the raz Blanchard. 40 oceanographic measuring devices were set up in December and a 10-tonne structure was lowered to a depth of 35 metres in March. The measurements collected will increase the reliability of current data and production estimates.

Annual corporate and social responsibility report 2016



#### PROSUE

DCNS delivered all construction specifications to ICN in August. The work of producing and integrating the submarine's combat system are now well underway; a combat system integration platform has been established in France to carry out tests and train the Brazilian sailors.

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#### CS MALAYSIA

The Malaysian corvette programme reached several major milestones during the second half of 2016: the basic design stage has been completed and will now be followed up by the detailed platform design stage, the end of the PSIM design reviews, delivery of the PSIM I mast and the 3.2 version of the CMS SETIS<sup>®</sup> in Malaysia.





#### SAUDI ARABIA

Our DCNS Support subsidiary has carried out two major refits for frigates built by the Group in the 1980s, and 2000s as part of the Sawari 1 and 2 frigate programmes.

Annual corporate and social responsibility report 2016

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## DCNS, A SHOWCASE OF FRENCH EXCELLENCE

Thanks to DCNS, France belongs to the exclusive club of nations capable of designing ballistic missile submarines. By renewing the credibility of our dissuasive force, the Group actively promotes the reputation of French excellence. This is made possible by an infinite amount of expertise, built up over four centuries and probably unmatched anywhere else in the world.



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fields of activity are essential for DCNS' long-term future and are very closely monitored: nuclear propulsion, diving safety, submarine architecture and aviation installations.

As ships become increasingly digital, DCNS must be able to reassure its clients that they benefit from the highest levels of cybersecurity when using our products and services. New activities are being added to the Group's offering to address this major issue. FOCUS

DCNS is the only actor in the French industrial sector capable of totally overseeing ballistic missile submarine programmes, the most complex systems in the world. This superiority underpins its image of scientific and technological excellence, as well as enhancing its international credibility and standing. It is backed by a chain of subcontractors, which includes the country's very finest specialists in the mechanical, electrical and electronic fields.

#### **OPERATIONAL EXPERTISE**

The particularly exacting demands associated with its activities calls for highly specific industrial infrastructure and competencies, listed in 70 technical fields such as sheet metal forming, 100 HLES steel welding (sturdy hulls), nuclear security, diving security, etc. Maintaining and passing on design and construction expertise is an ongoing challenge for DCNS, due to the discontinued nature of its programmes and their low-volume unit production. This fact of life obliges the Group and its suppliers to be capable of managing periods when the workload is slack just as well as when demand peaks - while maintaining specific, rare and highly specialised skills over time. With regard to this, forward managing of jobs and skills is an essential aspect of forecasting needs and, as a result, of making us more competitive.

#### PRESERVING OUR HERITAGE

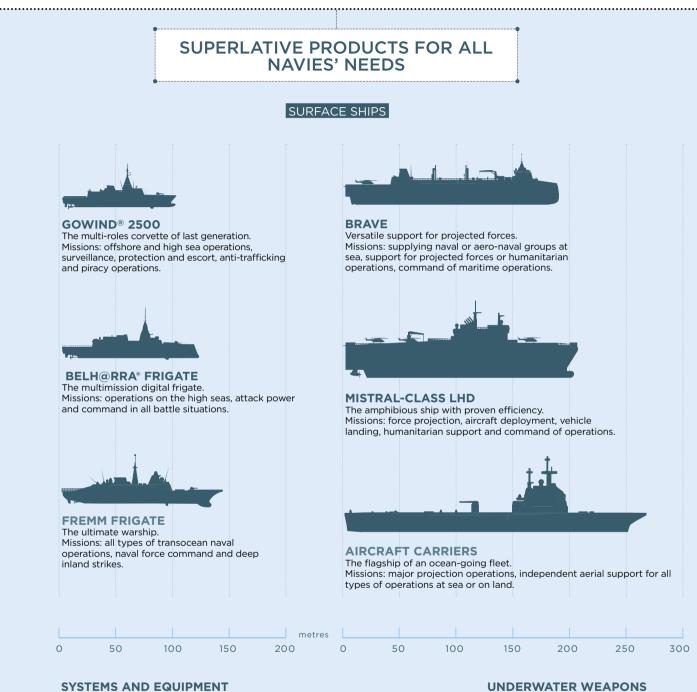
In 2016, the Group began to examine the issue of having full command of the most critical skills. To preserve national sovereignty, but also the safety of our ships and our staff members who design, maintain and operate them, we must increase our vigilance with regard to these specialists. Four of these sovereignty issues were identified: nuclear propulsion (design, production, maintenance and operation of the on-board nuclear boilers), diving safety (having full command of the submarine underwater), submarine architecture (authority of submarine design) and aviation installations (design and maintenance of systems transforming a surface ship into an aeronaval base).

The Human Resources Department also launched a first series of video sequences for operators. In the form of filmed tutorials, these videos invite them to acquire operational proficiency of a complex, technical or strategic procedure before performing it "for real". For the moment, priority is being given to preserving the heritage of technical procedures (which may be sensitive or part of standard technical operations). Having command of these will contribute to guarding against non-guality, but also harmonising practices between apprentices and their tutors, between staff members at various DCNS sites or subcontractors as well as, perhaps in the future, between the French Navy and foreign navies.

#### YESTERDAY AND TOMORROW

French excellence, as illustrated by DCNS, also involves recognising some of the company's traditional customs such as seamanship, the naval equivalent of trade guilds on land. According to the 70/20/10 rule, DCNS has revised its training programmes to combine a larger proportion of apprenticeship experience and learning from peers (70%) with providing information (20%), so that actual courses only make up 10% of the training in procedures which, in many cases, are not encountered anywhere else in the world.

Finally, DCNS' leadership role hinges on incorporating new skills, such as those imposed by naval cybersecurity, which we must give to our clients. We have the responsibility of anticipating how current skills will evolve so we can be ready to meet the opportunities and challenges of the future.



#### SETIS\*

The frigate and corvette combat system for high-intensity naval operations.

#### **POLARIS**\*

The on-board compact, robust and intuitive maritime surveillance and defence system.

#### SHIPMASTER\*

The nautical piloting and installation management system for secure navigation under all circumstances.

#### SYLVER\*

The modular, lightweight and totally secured modular vertical multimission launch module.

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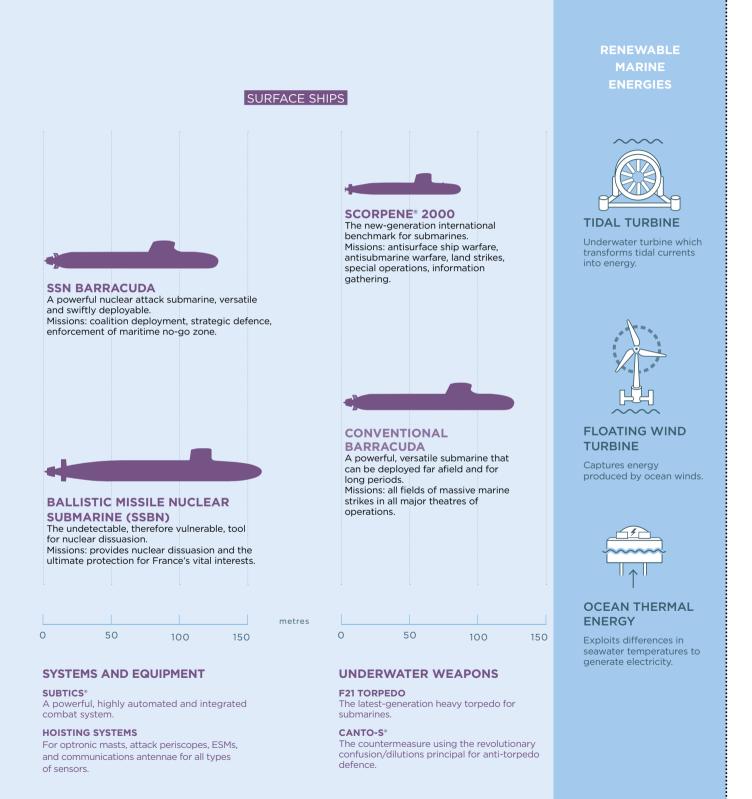
The world's most modern light torpedo, adopted by seven navies, capable of being deployed from any naval or aerial platform.

#### CANTO-V\*

The countermeasure using the confusion/dilution principal, revolutionary in anti-torpedo defence.

#### NEW SOLUTIONS FOR THE FUTURE

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## COLLABORATIVE INNOVATION ACCORDING TO **DCNS**

THE NUMBER OF PROJECTS THE COOPERATIVE FACTORY LAB WILL HANDLE ANNUALLY FOR THE FUTURE OF INDUSTRY (DCNS, PSA, SAFRAN)

How does DCNS maintain full command of its products' innovations, technologies, procedures and future services? Some of the answers can surely be found in collaborative working.

#### PARTNERSHIPS

Several partnerships with international universities, including in Australia, were initiated in 2016. DCNS is involved in such partnerships in eight foreign countries.

#### **CREATING SYNERGIES**

Innovation, as practised by the DCNS Group is essentially collaborative. This can first be seen by its internal organisation. Teams dedicated to R&D (Research and Development) as well as R&T (Research and Technology), steered by the ITE (Innovation and Technical Expertise) Department are incorporated into the General Management Department to improve synergy with the product policy and brought together at a single site, the Ocean Technocampus. This collaborative platform brings together all players from the industrial, teaching and research fields, enabling the sharing of knowledge and emulation between the various partners to speed up innovation.

#### THE "LAB" MODULE

Innovation is also a key element in the Group's programmes at each site, where efforts have been crystallised over the past few years by setting up, with the support of the Information Systems department, collaborative areas open to the outside world on the model of the "Fablab". For example, there is the Naval Cyber Laboratory at Ollioules, or the first OpenLabs created at Angoulême-Ruelle and at the Technocampus Ocean which orchestrate the site's expertise and will soon be establishing a network. The DCNS Innovation Booster, accelerating the Group's innovations, completes our resources designed to produce parts to meet the needs of the Group's various entities, made possible by innovative additive manufacturing processes.

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#### WINNING LINKS

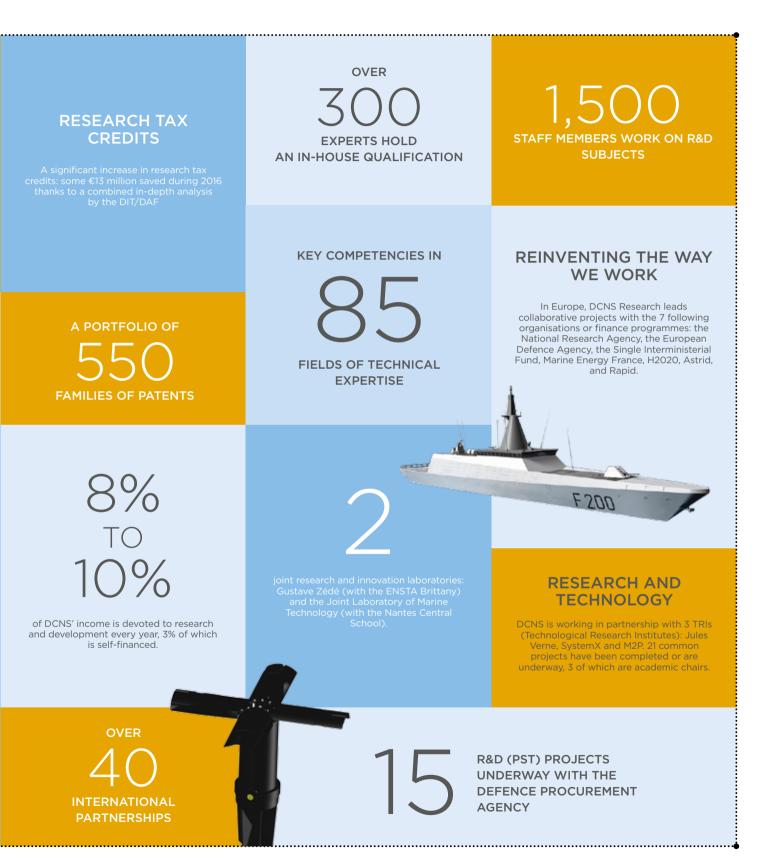
With its open innovation, the Group naturally forges many links with academic, industrial and governmental partners to encourage the emergence of technical breakthroughs. DCNS research's primary purpose is even described as "to extend our search for innovation to include outside bodies with the aim of developing partnerships in France and internationally". Our experts are now experienced in carrying out collaborative projects and sharing their knowledge via publications and conferences. This approach has also been illustrated by our recent involvement in the Ocean Technocampus in the region of Nantes and the Ocean Technology Park at Ollioules, as well as our setting up of the Factory Lab at Saclay in 2016.

#### NAVAL INNOVATION DAYS

Over 150 participants attended the first edition of the Naval Innovation Days at the Ocean Technocampus on 28 and 29 June 2016. Two days devoted to innovation in naval defence and synergies in R&D, addressed via the presentation of innovations introduced by DCNS and its network of partners, backed by the associated roadmaps. All participants, DCNS actors, governmental partners, innovative SMEs, scientific laboratories and representatives of major industrial groups were then able to make the most of this fresh input during workshops, stands and round-table discussions.



#### NEW SOLUTIONS FOR THE FUTURE



### INNOVATION AS A DRIVING FORCE

In the field of innovation and R&D, DCNS never ignores any technological breakthrough, making sure it can offer them to its client navies once they have been fully validated, thereby ensuring their operational superiority.

2016 saw all teams from the DIT (Innovation and Technical Expertise Department) joining forces with DCNS Research at the Ocean Technocampus, close to Nantes. This transfer from our Parisian head office reflects the General Management's wish to see the DIT located closer to actual research centres on a collaborative platform close to an industrial site such as that of Indret. We have also completed aligning and focusing our Innovation roadmap with the needs of our product lines and services, which we have named "Top 30 DCNS R&D projects".

Among the technical themes that have been focused on during this year, special mention should be made of i-maintenance and cybersecurity. In view of the detailed information we have about the systems we can now access (big data), we should be able to carry out preventive maintenance or detect any dysfunctions indicating a cyberattack. We can exchange data with a land-based centre providing support in solving problems after validating solutions on the platform.

This year also stood out for the successful docking trials of a submarine drone on a fixed underwater station. This enabled it to recharge its batteries unassisted and transfer collected data to the docking station. Significant progress was also made with regard to renewable marine energies with the first connections of tidal turbines to the electricity grid. Studies being carried out on wind turbines and ocean thermal energy have also been as dynamic as they have been promising.

The following trend has made us more outward looking. Work with industrial and research partner laboratories has been initiated, with the aim of extending the relationships we have with academics over time. This is the thinking behind the Joint Laboratory of Marine Technology. Set up by DCNS, the Nantes Centrale School and Nantes University, it should enable us to speed up technological developments in the three key fields of naval military technologies (additive manufacture, naval hydrodynamics and multi-physical digital simulation), providing warships with genuine operational superiority at sea. This second initiative complements the previous one which took place at the end of 2015 with the ENSTA Brittany (fatigue resistance, mobilisation of materials and mechanical trials). A third is being planned for 2017 with the ENSTA ParisTech in the field of artificial intelligence. These projects complement our commitments to several teaching chairs and collaborative research projects which link us with the

ERECGRAPHIC

Jules Verne TRI (Technical Research Institute), M2P and SystemX.

DCNS is also looking to adopt a team approach to the DPA with regard to the Naval Innovation Days, the first of which took place last June. Surrounded by academics, but also by SMEs, DITs and start-ups, the Group has demonstrated its prowess as the leader of naval innovation in France.

In 2016, this collaborative movement became international, particularly in Australia. Although the initiative was left to our Australian partners, a series of R&T cooperation agreements have just been agreed in the Naval field with several of their universities in fields such as acoustics, materials, hydrodynamics, anticorrosion measures, etc. The idea is to combine knowledge provided by DCNS with the research being carried out by their very highly qualified scientists, to extend subsequently the Australian submarine programme. This trend promises to grow stronger in the coming years with even more countries becoming involved.

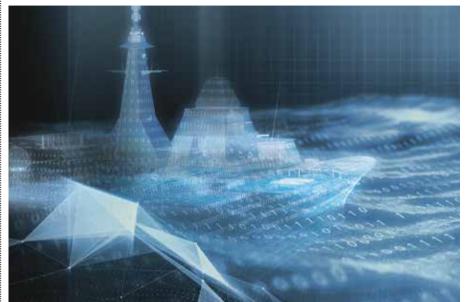
#### **EXPERT OPINIONS**

#### ÉRIC PAPIN

DIRECTOR OF INNOVATION AND TECHNICAL CONTROL

"In 2016, DCNS became one of the Top 30 patent filers. Having made 47 applications published by the INPI, the Group took the 29<sup>th</sup> place in this Safran, both cofounders with DCNS of the Factory Lab in Saclay. We've come a long way since the time when keeping secrets was considered more important than registering a patent! There are two major reasons why we make such significant efforts in the combat performance superior to that of the enemy. The second is designed This approach underpins our thinking with regard to factories of the future with more efficient industrial procedures and a modular approach to product design. For our new product lines will be designed to take into account clients' constant technical demands and their evolving

#### NEW SOLUTIONS FOR THE FUTURE



#### CYBERLAB

DCNS has created the naval cyberlab, a new area for research, demonstration and instructions in cybersecurity. This industrial tool makes it possible to test and develop IT security solutions for naval systems and is also a technological showcase where our client navies can be trained.

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#### LAVAL VIRTUAL AWARD

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During the International exhibition on virtual technologies and their uses, DCNS and CLARTE won a Laval Virtual Award for the development of a virtual simulation platform designed to train aviation crews on military ships, the Naval Helohandling Trainer.



#### ONERA

In June, DCNS and the ONERA (French centre for aeronautical, space and defence research) signed a renewable five-year framework R&D cooperation agreement.

#### NEW SOLUTIONS FOR THE FUTURE



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#### HOLISHIP

Validated by the European Commission in August, the collaborative research projects in which DCNS is involved, via DCNS Research and its subsidiary Sirehna, are aiming to optimise methods of ship design and operation, as a direct extension of the Virtual Ship. We will be working in association with the TRI SystemX.



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#### MALAYSIA

In April, a cooperation agreement was signed between DCNS and the Malaysian University of Technology OTEC (Ocean Thermal Energy Conversion) Centre for the development of OTEC in Malaysia.

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#### SCIENTIFIC COMMITTEE

Appointed last spring, this committee is made up of 13 experts from 5 different countries specialised in the field of science and research. This forum for discussion and suggestion has been given the responsibility of shedding new light on DCNS' innovation policy.



### FACTORY LAB, DCNS INVENTS THE FACTORY OF THE FUTURE

Together with PSA and Safran, DCNS is one of the three industrial co-founders of the Factory Lab platform, inaugurated in September 2016 at Saclay. Streamlined and versatile, this collaborative platform examines innovative industrial procedures and technological solutions. A concentration of added value for the French factory of the future.





The budget approved by the partners and the government, for five years.

Factory Lab is steered by the Atomic Energy Commission, together with the Technical Centre for Mechanical Industries and the Higher School of Applied Arts and Crafts. In addition to the three industrial joint founders of this innovative ecosystem, the project also involves several other technology suppliers, including Actemium and Dassault Systèmes, academics, start-ups and SMEs.

DONS

20 new projects and

new projects and demonstrators launched every year for a 12-month period on average, based on industrial partners' case studies. FOCUS

On 28 September 2016, DCNS, PSA and Safran inaugurated Factory Lab on the premises of the AEC at Saclay during a ceremony attended by the Secretary of State for Industry. With this official launch under the auspices of the Alliance for Future Industry, France is making another significant move in the global race involving all the major nations at the cutting edge of digital innovation.

#### A UNIQUE STRUCTURE

Without precedent in our country, Factory Lab has not been created to develop new technological bricks. Its ambition is more pragmatic, aiming to solve concrete problems identified by the trio of industrial founders (soon to be joined by Technip, Faurecia and Bureau Veritas). The finest current technological suppliers, academics, integrators and French start-ups will be invited to provide innovative solutions for the "use cases" presented to them, which Factory Lab will then assess and industrialise. This is what makes the project so enterprising. With hoped for results achieved, each industrialist will then be able to test and implement them. Saving time and money in the development of useful, tested or existing industrial procedures is one of the main motivations for the "clients" and technoproviders involved. They also benefit from having their solutions brought to market more quickly.

#### **TYPICAL USE CASES**

During its initial months, the Factory Lab was mainly focused on searching for subjects with a common interest. A challenge in itself for this trio of industrials active in three different fields: naval, aeronautics and automotive. It was a vast brainstorming which was stimulating for us all. It also enabled us, at DCNS, to make progress in several fields and confirm a number of our technological approaches. We owe this advantage to the wide scope of our activities which range from initial design to in-service support and ship deconstruction. This allowed us to identify two main themes: the digital factory (modelling, simulation, optimisation, automation of manufacturing procedures and verification) together with assistance to operators (physical and cognitive). A dozen use cases were put forward in 2016, increased to a total of 20 every year, from 2017.

#### AN EMBLEMATIC COMMITMENT

One of DCNS' priorities with regard to the Factory Lab is to maintain a powerful mobilisation in the field, i.e. among our users, at our industrial sites and the issues we encounter. Our aim is to encourage the emergence of innovative solutions to increase our industrial efficiency in the field of manufacturing techniques and control procedures. It is not to follow futuristic, utopian paths which would be inappropriate for our real needs. For DCNS, the factory of the future is, in fact, an optimised factory of the present. One which is more protective for staff members, it makes people the focus of our production process, providing them with the right information and the right tools at the right moment to provide support and optimise the entire manufacturing process. The technology is there to serve performance and not hinder it.

DCNS' commitment to Factory Lab demonstrates its determination to have an active role to play in the factory of the future. This theme is included in the Group's R&D Top 30, involving its commitment to innovation and technical proficiency just as much as to its other operational orientations. Additional work is being carried out at the same time on the TRLs (Technology Readiness Levels), together with an upstream involvement with the IRT Jules Verne, in particular in the field of robotics. Everything is interconnected and is all set to gain even greater importance in the years to come.







### "

DCNS IS GENERATING NEW GROWTH LEVERAGED FOR THE GROUP AND ITS PARTNERS IN FRANCE AND INTERNATIONALLY"

### "A PROFITABLE GROWTH STRATEGY"

JEAN-YVES BATTESTI GENERAL SECRETARY

#### A fast-evolving environment

In 2016, DCNS had to face several challenges which confirmed the relevance of the Group's strategic development tracks. International naval defence markets are growing in a geostrategic context marked by the return of power states such as China and Russia and a risk of changes to regional balance in the Far North, the Indian Ocean and the China Sea. At the same time, competition has become increasingly keen. This is due to major European industrials in the sector, but also new Chinese, Korean, Russian and Japanese actors whose growth is financed by the considerable increase in these countries' domestic defence budgets.

Our strategy keeps pace with these changes in the international context. We must therefore cater for our clients' concerns regarding sovereignty in the military, industrial and energy fields. This makes developing the competitiveness of our products and our services essential, as well as the need to build partnerships with client countries industries, improving our productivities and maintaining a technological lead on our competitors. Our major success in Australia confirms the soundness of this strategy. Furthermore, in 2016, our staff members took the Group's innovation to another level by offering the best products at the right price; our new BELH@RRA®, the SMX<sup>®</sup> 3.0 concept ship and our integrated cybersecurity offering, presented in October at the Euronaval show, illustrate this perfectly. Our Progress Plan has focused our staff members on reshaping development tools and methods based on the Dassault Systems 3DEXPERIENCE®, integrated management of the supply chain, improvements in industrial productivity and setting up the factory of the future. The comprehensive performance agreement negotiated in 2015 enables us to optimise structural costs, while negotiations on reorganising working conditions are still underway. Little by little, we are establishing the foundations of an industrial and social pact designed to create the potential capacity we need to adapt to the future

#### An industrial strategy serving our clients

In this keenly competitive context, with its accelerating technological

#### AIMING FOR EXCELLENCE



#### REINFORCING OPERATIONAL PERFORMANCE

With an increased operational result of  $\pounds$ 90 million and an income of  $\pounds$ 3.2 billion, the Group reached its financial targets in 2016. This is one of the first concrete results of the Progress Plan and the fruit of significant efforts to improve our industrial performance. This result consolidates the positive dynamics which underpin DCNS' ambitious target for the next ten years: a Group generating an income of over  $\pounds$ 5 billion with a worldwide industrial reach and profitability at the top end of the sector.



#### BEING A CORNERSTONE OF NATIONAL SOVEREIGNTY

The Group's primary vocation, this field of activity attracted major investments in 2016, aimed at maintaining key competences within the company, particularly those relating to nuclear fields which cannot be backed by export programmes. Our investments in R&D also enable us to contribute to ensuring France maintains a significant technological edge. The Group strengthens the naval sector via the management of its portfolio of suppliers and establishing a long-term vision.



Winning the Australian contract confirmed that the efforts made by the Group to develop its presence on the international market were well founded. This is an approach that involves building confidence with our clients, staying attentive to their needs, organising and fully mastering technology transfers, guaranteeing client navies' operational superiority by our product offering and innovation, making long-term commitments, working in collaboration with governmental authorities and our industrial partners



### EXPANDING IN THE FIELD OF RENEWABLE MARINE ENERGIES

After the decision in 2015 to focus on the three most relevant key technologies related to the market and DCNS' assets, together with Bpifrance, Technip and BNP Paribas Développement, we set up a subsidiary perfectly adapted to meet the needs of its market: DCNS Energies. Providing significant leverage for growth, in ten years' time, this entity will be contributing up to 20% of the Group's total income.

cycles, one of DCNS' strategic objectives is to gradually improve our operational results so as to reach the highest level in the sector, while generating the resources necessary to invest in modernising our industrial capacity, enhancing our offering and more closely meeting the needs of our French and international clients.

#### Naval defence, a historical vocation

At the forefront of DCNS' objectives is its determination to be a cornerstone of national sovereignty by maintaining its ability to design, build and support nuclear submarines and the aero-naval group. This fundamental mission depends upon it maintaining its excellence and expertise, the quality of its industrial capability and the strengthening of its supplier base. Bearing in mind that the ship of the future will also be digital, cyberprotected and connected. This ambition stimulates a dynamic vision of innovation and an ability to integrate emerging technologies and upcoming cutting-edge products. In this way, DCNS is looking towards the future so that it can supply >>>

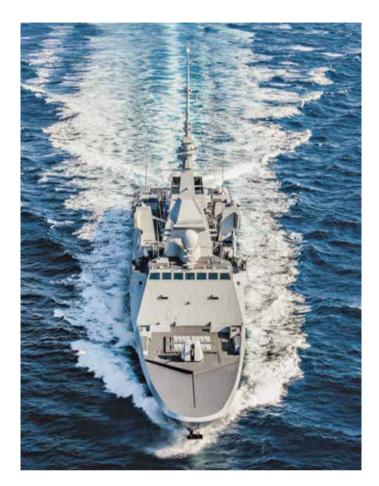
>>> the equipment ensuring the French Navy's operational superiority at the right price.

### A Vanguard position internationally

DCNS is the European naval defence leader in a particularly competitive field. In 2016, the Group stepped up its growth strategy on international markets by developing and strengthening industrial partnerships in client countries. It now has subsidiaries in some dozen countries and has significantly reinforced its support role to fleets in service by setting up dedicated, locally based teams. This international growth strategy generates added value for the client countries' economies and for the French Group's entities which make significant contributions to fulfilling contracts won in this way.

### Maintaining technological superiority

DCNS devotes significant resources to R&D, the aim being to offer our client navies solutions enabling them to assert their operational superiority. The DCNS Research teams, together with the technical expertise and innovation specialists have now been brought together at Technocampus Ocean. The Group has formed many partnerships with innovative companies and those in both national and international scientific communities. They are particularly focused on the factory of the future as well as accelerators of creativity and innovation. Its sci-



entific committee, set up in 2016, sheds new light on its policy of innovation.

### RME: establishing a maritime field of activity

By setting up its new subsidiary DCNS Energies in partnership with Bpifrance, Technip and BNP Paribas Développement, the Group has created a market leading, world-class industrial player with a vocation to considerably develop renewable marine energies. This company has come into being as a result of careful strategic planning making it possible to focus investments in three key technologies selected for their promising markets and our corresponding fields of expertise – tidal turbines, floating wind turbines and ocean thermal energy – so as to take them to industrial levels.

#### FOCUS

### DCNS ENERGIES, A NEW PLAYER IN RENEWABLE MARINE ENERGIES FOR WORLD MARKETS

For DCNS, undergoing change also means setting up an organisation adapted to the innovative and promising market of renewable marine energies (RME).

The decision to set up a subsidiary to handle RME activities and create DCNS Energies in December 2016 is the culmination of a process lasting almost ten years. DCNS invested its own capital in this field from 2008 until 2013, when it took a stake in the Irish company OpenHydro. DCNS Energies' objectives are clear. It aims to bring RME technologies to their maturity, industrialise the processes developed by R&D, establish a long-term and profitable economic model and ultimately consolidate DCNS' leadership in RME on a global scale.

The subsidiary's independence will allow it to meet the specific aspects of its markets which, by definition, are different from those of naval defence, DCNS' core business. It is in order to foster the best conditions for growth with the agility and swiftness essential for its success that DCNS has set up a specific organisation.

DCNS Energies covers three technologies: tidal turbines, floating wind turbines and ocean thermal energy. On these markets, DCNS Energies has the role of prime contractor/integrator and supplier of turnkey solutions. In the field of tidal turbines in particular, DCNS will be the contact of choice for the world's largest energy suppliers, since it can act as a consultant for studies of sites and resources, RME farm architecture, the manufacture and installation of turbines and their connection to electricity grids, without forgetting system maintenance.

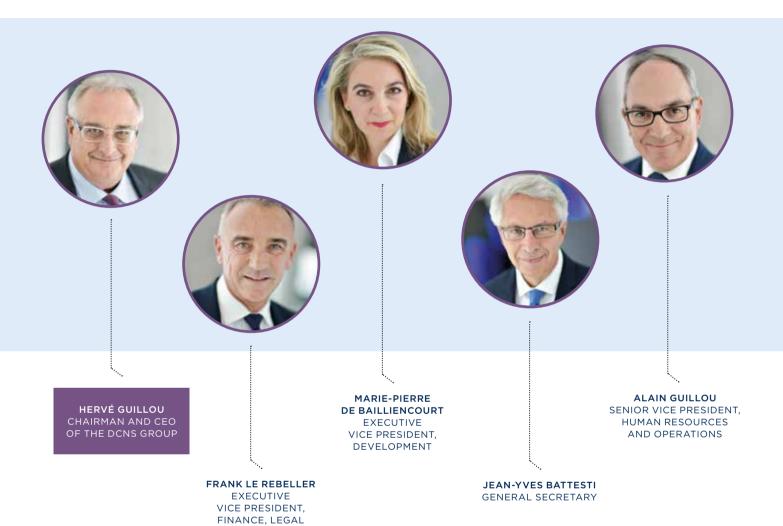
### €150 MILLION

The scale of investment in euros planned by DCNS in RME between now and 2020. After investing its own capital in the project for almost ten years, in 2016, DCNS joined forces with three other investors to continue its development: Bpifrance,Technip and BNP Paribas Développement.



A clear ambition for RME In 2016, DCNS stated its ambition to secure the future of the RME sector by means of outside financing while still setting the technological milestones. In order to succeed, the Group will make a priority of investing in areas with high-energy potential throughout the world.





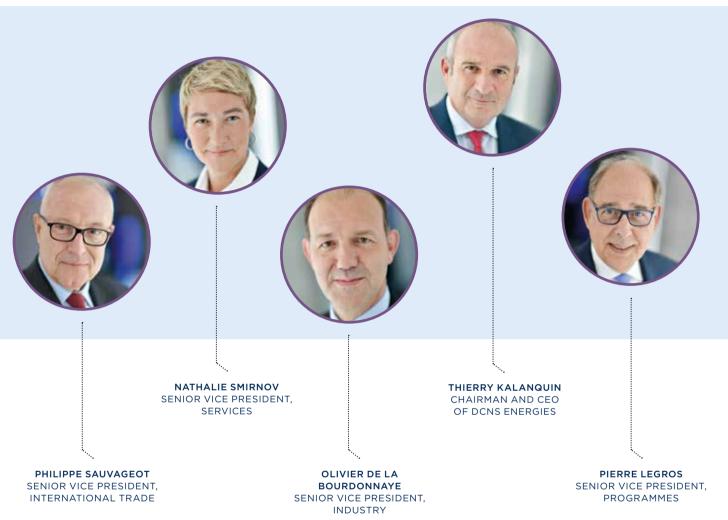
### THE MANAGERIAL TEAM

#### THE BOARD OF DIRECTORS

Chaired by the Chairman and Chief Executive Officer, the Board of Directors defines the Group's targets and orientation, taking decisions on all issues having a major impact on the Group's strategy, functions, sales activities and operations. It also ensures consistency of approach and action and reflects the Group identity.

It consists of The Executive Vice President, Finance, Legal & Purchasing, the Executive Vice President, Development, the General Secretary, the Senior Vice President, Programmes, the Senior Vice President of Industry, the Senior Vice President of Services, the Chairman and Chief Executive Officer of DCNS Energies, the Senior Vice President of International Trade and the senior Vice President of Human Resources and Operations.

#### GOVERNANCE



#### THE GENERAL MANAGEMENT COMMITTEE

The General Management Committee considers all the major strategic economic, financial or technological policies relating to the company's activity. Its primary concerns are the definition, consistency and implementation of the strategic plan; an overall vision of potential risks and the Group's capacity to implement initiatives capable of meeting and overcoming them; the company's development and the protection of its social interest. It is made up of eighteen members, eleven of which are appointed by the Shareholders' General Assembly, six represent staff members and one is a representative of the Government.

The DCNS General Management Committee includes: - Administrators elected as staff members' representatives: Mr Jacques André, Mr Thierry Mr Joël Ricaud and Ms Isabelle Roué;

Barbarin, Mr Laurent Chagnas, Mr Gilles Rapale, - Administrators appointed by the Shareholders' General Assembly: Mr Jacques Hardelay, Ms Sandra Lagumina, Mr Bertrand Le Meur, Ms Sophie Mantel Appointed at the Government's suggestion; Mr Pascal Bouchiat, Mr Patrice Caine, Ms Nathalie Ravilly; Appointed at Thales' suggestion; Ms Gabrielle Gauthey, Mr Hervé Guillou, Mr Luc Rémont ; - Administrator appointed by decree as a representative of the Government: Mr Jack Azoulay.

### CREATING SUSTAINABLE VALUE

DCNS has always made CSR (corporate social responsibility) a key aspect of its vision and is committed to pursuing ongoing improvement for its economic growth and human resources policy as well as to minimise the impact of its activities on the environment.

As a major industrial player, the Group is determined to contribute to local development and is fully aware of its responsibility towards society. All our staff members share the same ambition: to serve our stakeholders within a framework of confidence and respect as part of a joint project for responsible development.

As a member of the United Nations Global Compact, DCNS once again earned the Advanced rating in 2016, the highest level awarded, proving its dynamic involvement in CSR. The Group deploys this policy as part of its ongoing improvement approach, built around its ethical and corporate social responsibility Committee and its Compliance orientation. DCNS also attaches great importance to respecting the requirements of the ISO 26000 standard and is, at its own request, regularly assessed on its performance and advised as to how further improvements may be made.

As an employer, investor and partner, DCNS is determined to be an integral part of the local economic fabric and build constructive relationships with all its stakeholders. Working with public institutions, the Group takes an active part in discussing local economic development issues, becomes involved in offering job opportunities to young people from underprivileged neighbourhoods as

well as supporting and advising company founders. Its investment in the Henri-Fabre Team (a multi-domain technology sharing project), as well as its role as president of the Mediterranean Sea Centre (which encourages sustainable development of maritime and shoreline economies), both demonstrate this commitment. The directions set by the Group are reflected at its sites: local initiatives are made in the fields of training, disability, protection of the environment and quality of life at work. In 2011, DCNS was awarded the Var CSR Trophy in recognition of its dynamic policy and initiatives at its three sites in the Var département, which continue to demonstrate their commitment. The Group also involves its suppliers in its CSR policy, asking them to also comply with its code of conduct.

Employing 13,000 staff members worldwide, DCNS deploys a highly active human resources policy which encourages professional advancement and international mobility. This is illustrated by the Group's initiative in 2016 to offer its managers a new opportunity of developing their skills by setting up a more efficient managerial career path. Convinced of the benefits offered by work-study programmes, in 2016, DCNS implemented an active recruitment policy reflecting this principle, which led to 350 co-op students being taken on, plus a



similar number of interns. Also, as part of the second disability agreement, the Group made additional efforts to incorporate disabled staff members into the workforce and to assist them via a comprehensive and personalised system. DCNS has also set itself the goal of developing its procurement in disabled-friendly or protected sectors, reasserting its confidence in disabled-friendly ATF Gaia to update its IT assets.

A real performance indicator, environmental protection, is our prime concern. Every one of our economic and industrial decisions are made with environmental issues taken into account. We are pursuing our efforts to improve our energy performance and reduce our greenhouse gas emissions. More and more initiatives are being taken at our sites to limit our environmental footprint, such as the CTP (corporate travel plan), which organises sustainable modes of transport. Our eco-design approach, our ambitions in the field of renewable marine energies - marked in November by the successful generation of energy by our subsidiary OpenHydro's tidal turbine in Canada - demonstrates the powerful determination of our commitment to the environment.

#### GAËLLE ROUSSEAU

EXPERT IN CHARGE OF THE ENVIRONMENTAL AND ECO-DESIGN FIELD OF ACTIVITY

"DCNS has ISO 14001 certification for its management and product design, making it a precursor in the naval field. our clients' wish to pursue eco-citizen innovation, the 'life-cycle' approach being associated with 'total cost' enabling them to reduce their final invoice. For example, controlling a ship's energy consumption during operations gives it a greater operational range at sea. Furthermore, the choice of recyclable materials at the design stage avoids major processing costs at the end of the vessel's life cycle. In 2016, our aim to have 50% of our projects taking the environment into account was reached. The medium-sized frigates and Submarine programme incorporate the

#### AIMING FOR EXCELLENCE



#### DISABILITY

Recruiting apprentices and interns with disabilities is one of the aims of the second disability agreement signed by DCNS and staff members' representatives covering 2014-2017. Since 1 January 2014, 46 young people are on work-study programmes and 37 interns have joined the Group which supports them via a comprehensive support programme.



#### **ECO-DESIGN**

NEMO, the OTEC (Ocean Thermal Energy Conversion) generating project in Martinique scores a first on two counts. This first floating OTEC generating station will also be a point of reference in ecodesign for other renewable marine energy projects. Two life-cycle analyses have already been carried out and an environmental analysis is underway.

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#### ENVIRONMENT

DCNS pursues an eco-responsible strategy by constantly managing its industrial risks and reducing the environmental impact of its activities. The Group is also devoted to taking into account the environmental factor at the outset of all its programmes. In October 2016, the Group's waste sorting score stood at 97%.

Annual corporate and social responsibility report 2016

#### AIMING FOR EXCELLENCE



#### QUALITY OF LIFE AT WORK

The "All Aboard" project, launched in 2016, which involved over 700 staff members from all sites, made it possible to identify 300 initiatives associated with the quality of life at work; some have already been applied and a further 39 are currently being tested, several of which will be adopted in 2017 and extended throughout the entire Group.



#### TRAINING

The first Naval Day, organised in March during Industry Week, took place at the Ocean Technocampus where DCNS has its R&T centre. This event, aimed at state educationalists, aimed to present the wide variety of career opportunities offered by the naval sector, its technological implications and needs for skills throughout the country.



#### PROFESSIONAL EQUALITY

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Committed to the Association which celebrated its first ten years in May, its members work to promote scientific and technical opportunities for young girls. DCNS also makes sure that its female staff members have the same salaries and opportunities for advancement as their male counterparts, organising its efforts by deploying a second agreement concerning professional equality between men and women covering 2015-2017.



#### WE SUPPORT



 $\Box$ 

For the second year running, DCNS has been awarded the Advanced level of the United Nations Global Compact. This distinction, shared with only 50 other companies in France, confirms the efforts made by the Group in terms of human rights, standards of working conditions, the environment and the fight against corruption.

### COMPLIANCE, OUR GUIDELINE

Compliance is an undertaking of integrity representing a strategic benchmark to which we attach the greatest possible importance.

The Group and its entire staff share the conviction that success goes hand in hand with flawless industrial and commercial codes of conduct. In an everyday context, Compliance applies to our relationships with our clients as well as our partners, involving the responsibility of each and every one of our staff members. For our clients and prospective clients, but also for our partners and shareholders, this is a guarantee of integrity, abidance with the rules of competition and fair commercial practice. For the Group, Compliance is a competitive asset directly contributing to its performance, enhancing its image and enabling it to avoid potential risks. Furthermore, it boosts staff members' pride and their involvement in our collective project.

In the context of an increasingly regulated global economy and growing international presence, now covering 19 countries, DCNS reinforced its Compliance function in 2016. Driven by the General Management, this initiative was aimed at giving the Group stronger credentials in terms of Compliance, made up of policies and procedures bringing it into line with the highest international standards. This Compliance establishes a set of benchmarks, defining the means allocated to upholding its application. This steers the application and instruction of staff members in exercising Compliance. A Compliance Officer has been appointed at each one of our sites and subsidiaries, who can be referred to by staff members for any issue relating to this question.

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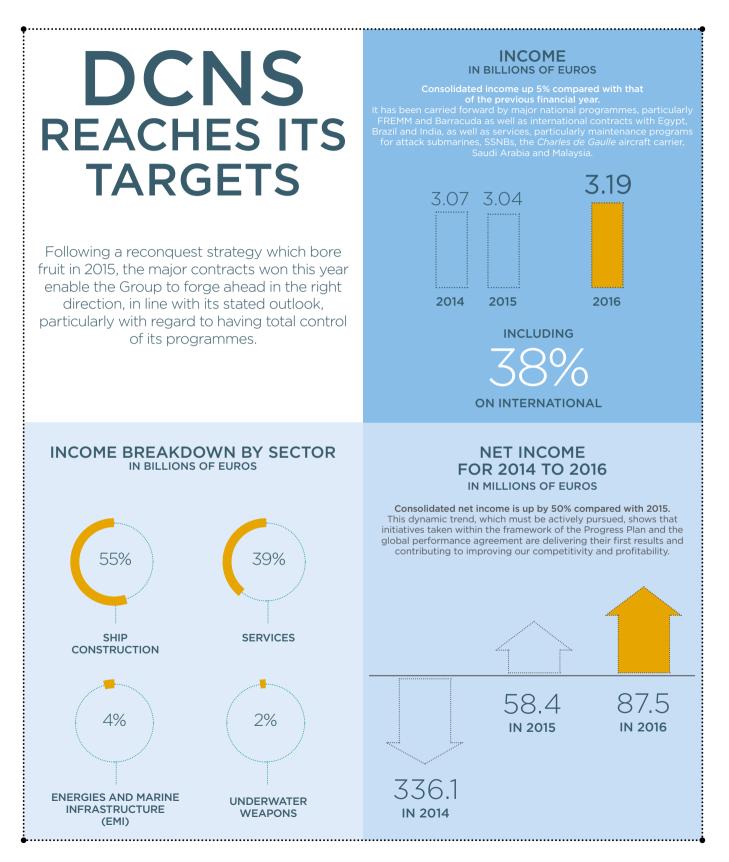
policies identified, aiming to ensure that our practices are in line with all applicable legislation and our procedures. A set of rules and tools help in the decision-making associated with each policy.



- A system covering: • initiating and following up business
- relationships; • gifts and marks of
- hospitality;
- sponsoring and philanthropy;
- lobbying and support for associations.
   Compliance software issues alerts in the event of risks.



staff members working with the Compliance team and some 25 Compliance Officers.



FINANCIAL AND EXTRA-FINANCIAL INDICATORS

# DCNS COMMITTED TO CSR

INCREASE IN GLOBAL DEMAND FOR ENERGY BY 2030

+30%

#### TOTAL GROUP WORKFORCE (INCLUDING SUBSIDIARIES)

12,779

(FTE) AT END-2016

511 STAFF IN INTERNATIONAL POSTS, INCLUDING 321 EMPLOYED LOCALLY AND

190 EXPATRIATES.

5.95%

PERCENTAGE OF STAFF MEMBERS WITH DISABILITIES IN 2016

40,000 DIRECT POSITIONS IN THE NAVAL SECTOR

**IN FRANCE\*** 

 $2^{nd}$ 

DCNS' ranking in the HappyAtWork 2016 ratings for companies where staff is happy.

OVER 20 YEARS OF PROGRAMMES USING TECHNOLOGY TRANSFER

\* Source: GICAN.

#### FINANCIAL AND EXTRA-FINANCIAL INDICATORS

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The marine field offers great business potential, but remains uncertain. In consequence, the Group strives to address environmental issues in its activities and its products. To make this trend an integral part of its procedures, respect for the environment is one of DCNS' ethical commitments and an integral part of an environmental policy deployed throughout all Group sites.

**OF R&D PROJECTS** CONTRIBUTED TO IMPROVING THE ENVIRONMENT IN 2015

2.5%

LESS ELECTRICITY CONSUMED<sup>(1)</sup>

1.60%

**FEWER GREENHOUSE** GASES EMITTED<sup>(1)</sup>

> (1) Report published in 2016 on 2015 figures.

# 301,958

319 DAYS OF TRAINING

#### RESEARCH AND DEVELOPMENT

In 2016, activities in this field were focused on our R&D projects and the development of RME (Renewable Marine Energies).

€113.8

OF INVESTMENTS, WHICH IS

3.56% OF OUR INCOME

FRENCH NAVY SURFACE SHIPS AND SUBMARINES BENEFIT FROM IN-SERVICE SUPPORT EVERY YEAR

TRACKS

#### OF MAJOR INNOVATION **IN A VARIETY OF FIELDS**

concerning products, components (equipment and systems), modelling or innovative manufacturing

## 

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#### AND FIND US ON



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