In 2017, we wrote a new page in our group’s long history of serving our clients.

The operational successes stemming from the joint commitment of our staff members and partners are too numerous to be listed in full. As examples, I can mention the delivery of the Gowind® corvette to the Egyptian Navy in just thirty-seven months, a record for the first of a series. There were also the delivery of the FREMM Auvergne to the French Navy, the commissioning of the Kalvari, the first Scorpène® built for the Indian Navy using technology transfer, the smooth progress of the mid-life refit for the Charles de Gaulle aircraft carrier, the completion of maintenance work on the Améthyste attack submarine, progress on the Téméraire upgrade as well as the three successful launches of the F21 torpedo. We have also had a number of commercial successes, such as the United Arab Emirates’ decision to choose the now sea-proven Gowind® corvette. Finally, our income is growing, and our average margins are steadily improving.

These achievements in 2017 highlight our new brand, Naval Group. Consistent with our past and our values, it allows us to clearly express our field of activity, raising our profile on international markets as well as being more attractive for new talent. In 2017, we recruited over 1,000 new staff members and have made commitments to three French regions to step up training in our naval activities and their appeal. Our new name clearly states our expertise and our vocation: to contribute to the French Navy’s sovereignty and that of our partner countries, as well as capitalising on our naval skills in the field of energy production. It pays homage to the pride and values of excellence that drive and bond our staff members, uniting them around a powerful vision of the future.

This name change marks an additional stage in our group’s far-reaching transformation. Resulting from the sense of commitment shown by all our teams, we are able to fully command the most technologically complex programs at the best possible cost. With Naval Group, our name may have changed, but not our commitment!”

HERVÉ GUILLOU
Chairman and CEO
In 2017, Naval Group reasserted its position as a global benchmark for naval defence and its commitment to renewable marine energies. Spurred on by its successes, the group is staying on course and continuing to extend its activities throughout France, Europe and beyond to conquer new markets.
The Australian Future Submarine (AFS) program concerns the design and production of 12 Australian oceangoing, conventionally powered, submarines. Following an international invitation to tender in April 2016, Naval Group was selected by the Commonwealth of Australia to integrate the powered platform. The combat system was awarded to Lockheed Martin. The first industrial contract, concerning the initial design stages, came into effect on 17 October 2016.
Naval Group has committed to supplying Australia with a submarine having regional superiority to replace the Collins-class submarines.

The new building devoted to the program in Cherbourg, Hughes House, was officially opened in the summer of 2017. It brings together the Franco-American-Australian governmental and industrial teams which will be jointly using the latest engineering tools and methods to create the initial concept of the future Australian submarines.

In Australia, invitations to tender were issued to equipment suppliers throughout 2017. Over 500 companies expressed interest in being one of the local suppliers involved in the project. Naval Group marked the opening of its new offices in Keswick by starting to plan studies for the design and construction of the Adelaide shipyard.

Malcolm Turnbull, the Australian Prime Minister, and Florence Parly, the French Army Minister, at Cherbourg in July 2017.

40 STAFF MEMBERS ARE WORKING ON THE FIRST STAGES OF THE PROGRAM IN ADELAIDE, PARTICULARLY DESIGN, SELECTION OF SUPPLIERS AND INFRASTRUCTURE PLANNING FOR THE NEW SHIPYARD.

SCIENTIFIC INTERACTION BETWEEN FRANCE AND AUSTRALIA IS GATHERING PACE. NAVAL GROUP IS LEADING A COLLABORATIVE R&D PROJECT WITH THE UNIVERSITY OF WOLLONGONG ON WELDING PROCEDURES TO BE USED FOR SURFACE SHIPS’ HULLS.

During the 36th edition of the La Presse de la Manche runs, the Naval Group team brought together 255 French and Australian runners.
In April, the Army Minister announced that Naval Group had been awarded the contract to develop and produce five medium-size frigates (FTI) for the French Navy. Naval Group will be offering a French version of its new, latest generation digital frigate Belh@rra®. The first of the five frigates in this program steered by the Defence Procurement Agency (DGA) must be delivered in 2023 so as to become fully operational in 2025. Producing a Belh@rra® frigate takes on average some two million working hours, three hundred thousand of which are spent in the design offices. This is a front-line frigate with a displacement of 4,000 t devoted to antisubmarine warfare. The French version of the Belh@rra® has been designed to meet all national needs.
In September 2017, the French and Italian governments initiated a collaborative process opening the way to establishing an alliance between Naval Group and Fincantieri in the field of naval defence.

The two groups play a key role within the steering committee set up to define a roadmap between now and June 2018 that precisely describes the principles on which the future alliance will be founded.

Furthermore, the agreement made between the French and Italian governments concerning Naval Group and Fincantieri participating in the capital of STX France marks a significant milestone and an opportunity to take naval cooperation to another level. Hervé Guillou, CEO of Naval Group, and Giuseppe Bono, CEO of Fincantieri, have stated: “Our two groups have already worked together successfully on the Horizon frigate and FREMM programs, and we are very keen to consolidate our European ambitions together. This project must enable us to underpin our international development within the context of keener competition in the military naval market, while at the same time continuing our respective missions to meet the needs of French and Italian navies.”
Reinforcing European naval defence

The aims:
• To reinforce the technological and industrial foundations of naval defence in France and Italy, while also extending both countries’ international reach in the field of naval industry.
• To create more jobs and support the trade balance both in France and Italy.

Avenues of collaboration:
• Joint design and production of surface ships (support and supply vessels, etc.).
• Pool research and development projects in the naval sector.
• Synergise and share best practices in the fields of procurement, services and industrial methods.
• Cooperate on surface ship projects.

Florence Parly, the Army Minister, and Bruno Le Maire, Minister for the Economy and Finance, in Rome on Thursday 1 February 2018 with their Italian opposite numbers and the CEOs of both groups, Hervé Guillou and Giuseppe Bono.
France

Renovation of La Fayette-class stealth frigates

The program to renovate the three La Fayette-class frigates (FLF) currently in service with the French Navy was launched in May by the Army Minister. The aim is to maintain the French Navy’s capacity during the transition phase leading up to delivery of the medium-size frigates (FTI) from 2023. This renovation work, due to begin in 2020, will be carried out at Toulon with Naval Group as the prime contractor.

Designed to carry out missions involving prevention, protection and intervention, the FLF vessels contribute to managing crises and protecting French interests throughout the world. In particular, the renovation will concern the electronic and IT systems controlling the ship (propulsion, rudder system, power plant, etc.) as well as the combat management system. This will be replaced by a version based on Senit® B, currently being installed on the Charles de Gaulle as part of its comprehensive upgrade. The tactical data links and anti-aircraft defence system will also be renovated.

Finally, the FLF ships will be equipped with an anti-submarine capability, incorporating a hull sonar and the Canto® anti-torpedo countermeasure system, developed by Naval Group to meet the threat posed by latest generation torpedoes.
As part of the United Arab Emirates’ naval forces’ strategic development plan, the acquisition of two Gowind® 2500 multi-mission corvettes, together with their associated services, was confirmed in December 2017. These are to be built by Naval Group in partnership with the Abu Dhabi Ship Building Company (ADSB). Naval Group and its UAE industrial partner will now continue discussions to finalise the contract. These Gowind® corvettes are versatile, latest generation combat ships, adapted to the needs of the United Arab Emirates’ Navy.
France-Saudi Arabia

Zamil Offshore Services Company and Naval Group set up a joint-venture

This joint-venture is responsible for maintaining civil and military ships, with a particular focus on the Saudi naval fleet. This is an important stage in naval and industrial cooperation with Saudi Arabia. Already established in the country for three decades, Naval Group is a strategic partner, playing an active role in the country’s Vision 2030.

The joint-venture provides solutions meeting its client’s needs and local facilities for carrying out naval and industrial maintenance in Saudi Arabia, drawing on Naval Group’s expertise as well as that of the Zamil Offshore Services Company.

Naval Group has been working in Jeddah since 2014 on maintenance and modernisation programs for the Saudi Navy’s combat ships (Medina-class frigates, Boraida-class supply tankers and Al Riyadh-class frigates).

The partnership between Naval Group and Zamil will drive the development of local skills and generate many new jobs, in line with the objectives of Vision 2030. It will also extend the strategic relationship between France and Saudi Arabia in the field of defence.
1. AMERICAS

**BRAZIL**
DCNS do Brazil (100%); Projetos e Sistemas Navais SA (100% subsidiary of DCNS do Brazil); Itaguaí Construções Navais (41%), construction of submarines (in partnership with Odebrecht).

**CANADA**
Naval Group Technologies Canada Inc. (100%).

**CHILE**
Energía Marina SpA (100% Naval Energies subsidiary), renewable marine energies and offshore oil/gas in Chile and South America.

**COLOMBIA**
Representative office.

2. FRANCE

**ANGOUËMÉ-RUELLE**
Equipment, simulators and training.

**BAGNEUX**
Information and surveillance systems.

**BREST**
Services, renewable marine energies.

**CHERBOURG**
Submarines.

**LOIRET**
Surface ships.

**NANTES-INDRET**
Submarine equipment.

**NANTES-TECHNOCAMPUS OCEAN**
R&D.

**PARIS – MARSEILLE**
Head office, renewable, marine and civil nuclear energies.

**OLLIOLLES**
Information and surveillance systems.

**SAINT-TROPEZ**
Underwater weapons.

**TOULON**
Services.

**Défense Environnement Services (69%)**
Multi-service and multi-technical infrastructure management (in partnership with Veolia Environnement).

**KERSHIP (45%)**
Design and production of medium-tonnage ships for governmental action at sea (in partnership with Piriou).

**NAVAL ENERGIES (55%)**
Builder of turnkey marine renewable energy installations (in partnership with Bpifrance, Technip and BNP Paribas Développement).

**SIREHNA (100%)**
Dynamic ship positioning, naval hydrodynamics, drone stabilisation and deck landing systems.

3. EUROPE AND THE MIDDLE EAST

**SAUDI ARABIA**
DCNS Support (100%), in-service support, DCNS Zamil.

**EGYPT**
Forward base at Alexandria; Representative office.

**UNITED ARAB EMIRATES**
Representative office.

**GREECE**
Representative office.

**IRELAND**
Representative office.

**NORWAY**
Representative office.

**NETHERLANDS**
Representative office.

**POLAND**
Representative office.

4. OCEANIA AND ASIA

**AUSTRALIA**
Naval Group Australia (100%).

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

**INDONESIA**
Representative office.

**MALAYSIA**
Naval Group Malaysia (100%) Boustead Naval Group Naval Corporation (45%), submarine in-service support (in partnership with Boustead).

**SINGAPORE**
Naval Group Far East (100%), logistics, naval and aeronaval maintenance systems.
**Superlative Products**

**Used in Strategic Missions by Over Than 50 Navies**

**Surface ships**

**GOWIND® 2500**
The latest generation multi-assignment corvette. Missions: offshore and high-seas missions, surveillance, protection and escort, anti-smuggling and piracy prevention.

**BELH@RRA® FRIGATE**
The digital multi-mission frigate. Missions: high-seas operations, striking power, commanding all aspects of combat.

**FREMM FRIGATE**
The ultimate warship. Missions: all types of transoceanic naval operations, naval force command and long-range onshore strikes.

**MISTER-CLASS LHD**
The tried and tested amphibious ship. Missions: force projection, aircraft launches, vehicle transport, humanitarian support and operational command.

**AIRCRAFT CARRIER**
The flagship of an oceangoing fleet. Missions: high power force projection, independent aerial support for all types of operations at sea and on land.

**Submarines**

**SCORPÈNE® 2000**
The new generation international benchmark in submarines. Missions: surface ship attacks, underwater warfare, land strikes, special operations and information gathering.

**SSN BARRACUDA**
A powerful, versatile and swiftly deployable nuclear attack submarine. Missions: coalition deployment, strategic defence and sea area interdiction.

**CONVENTIONAL BARRACUDA**
A powerful, versatile and swiftly deployable attack submarine. Missions: all types of conflict and large-scale marine attacks in large-scale theatres of operation.

**BALLISTIC MISSILE NUCLEAR SUBMARINE (SSBN)**
The undetectable, therefore invulnerable, aspect of nuclear dissuasion. Missions: nuclear dissuasion and ultimate protection of France’s vital interests.

**Renewable marine energies**

**TIDAL TURBINE**
Underwater turbine used to harness tidal current energy.

**FLOATING WIND TURBINE**
Captures the energy produced by ocean winds.

**OCEAN THERMAL ENERGY**
Uses differences in ocean temperatures to generate electric power.

**SYSTEMS AND EQUIPMENT**

**SYSTEMS AND EQUIPMENT**

**SETIS®**
The combat system used by frigates and corvettes for high-intensity naval operations.

**POLARIS®**
The compact, robust and intuitive on-board marine surveillance and defence system.

**SHIPMASTER®**
The nautical steering and equipment control system for safe navigation under all circumstances.

**SYLVEX®**
The lightweight and fully secured modular vertical multi-missile module.

**UNDERWATER WEAPONS**

**MU90**
The world’s most modern light torpedo, adopted by seven navies. It can be deployed from any naval or aerial platform.

**CANTO-VR**
The revolutionary anti-torpedo countermeasure, operating on the principle of confusion/dilution.

**UNDERWATER WEAPONS**

**F21 TORPEDO**
The latest generation heavy torpedo for submarines.

**CANTO-SP**
The countermeasure operating on the principle of confusion/dilution, a revolution in anti-torpedo warfare.
Above all else, Naval Group is made up of 13,000 staff members who proudly perpetuate a unique heritage boasting 400 skills, passed down from generation to generation for almost four centuries. The group aims to extend the reach of this vast expertise offered by the women and men who provide it.
Alexis, Meven and Alexandre, experts in installing crews on board, rely on augmented reality for their work.

Patrick, experienced in working with composites, carries out the stratification of a rudder.

“Within the Fluids family of professions, my contribution concerns the surface ship programs. I take care of training, carry out on-board checks and also take part in R&D work. No two days are ever the same. In the morning, I can be in the classroom explaining technical operations instructions and, in the afternoon, on board a ship, taking care of a pipework assembly problem. I enjoy this kind of variety.”

MIGUELITO LE FLOCH, boilermaker and pipelifter
Nantes-Indret

"I am a miller-borer. I do various types of machining such as drilling, boring or milling of parts made of stainless steel, steel or titanium for use in propulsion equipment. Here we are producing single items with high added value and very complex geometry. Miller-borer is a highly specialised job technically. You must enjoy working out how the parts should be positioned on the machine. That’s what makes this such an interesting job: no chance of falling into a routine!"

**FATHI GHERAIRI,** miller-borer

Nicolas and Quentin are focused on designing future ships, such as the upcoming intermediary sized frigates or third generation ballistic missile submarines.

Christian and Frédéric, specialised in mechanical design and industrialisation, are engineering experts who ensure the success of programs in this field.

Nicolas is a maintenance technician. He is contributing to the deployment of an ambitious investment plan for machines.
“I manage 20 boilermakers, welders and machine fitters, responsible for assembling the nuclear boiler on the Barracuda submarines. These operators have skills that are both rare and outstanding, resulting from the extreme complexity of our products. One of the aspects I focus on particularly is training their successors. It takes five to ten years to be fully competent and able to work independently in this team.”

NICOLAS GÉRARD,
team leader
At Toulon, Éric supervises the positioning of a new deck landing mirror on the Charles de Gaulle aircraft carrier.

At Brest, on board the Téméraire, Alain and Laurence, from the program management team, contribute their expertise in production management.

Gauthier is a mechanic-assembler at Toulon. He takes part in inspecting the aircraft catapults, a strategic aspect of the ship’s refit.

“...a very satisfying achievement.”

Hervé Mazé,
Health and Safety Manager IA M51

Glenn was hired as a machinist-miller after an apprenticeship at the Brest milling workshop.
“My assignment consists in monitoring the major mid-life refit of the Charles de Gaulle aircraft carrier. This includes managing a communications plan, photo shoots and videos of the major milestones. Other important aspects include VIP visits and presentations, travelling and press briefings in liaison with the French Navy. The work is intense, varied and exciting.

After twenty-four years spent as a communications officer in the French Navy, I very much appreciate working with Naval Group on this monumental project which is a major industrial challenge. And, like everyone else taking part in it, I am extremely proud of contributing to the comprehensive upgrade of the French fleet’s flagship!”

MARIE-LAURE MASSON, communications manager
At the registered office, the jurists and contract management experts — such as Nicolas, Armelle, Michel, Sonia and Vincent — advise on and follow up the group’s projects in France and abroad.

Members of the Program management team, Guillaume, Yves and Sébastien make their expertise available to clients.

“I am in charge of monitoring the legal aspects of operations involving group entities’ social life, from when they are initiated to when they are dissolved. My aim is to make sure they comply with all applicable company law regulations and our own governance rules. Contributing to the group’s internationalisation and extending my knowledge of legal systems in countries where we are established is extremely satisfying!”

FÉRIEL REDJOUANI, company law manager
“I take part in integrating combat management systems on multi-mission frigates. The aim is to detect any anomalies as early as possible, and above all making sure they have been eliminated when the software is installed. This means being able to accurately analyse clients’ needs so as to provide the best possible system tests. These are complex systems, making them all the more interesting to explore. It is a very proud moment to see them operating on board with the crew during the trials!”

NICOLAS LECACHEUR, functional integrator

Jean-Daniel, Charles and Jean-Bernard at the nerve center of a nuclear ballistic missile submarine combat system integration platform at Ollioules.

Bagneux

Gwendoline, an IT product engineer at Bagneux, manages combat system functional integration.
Naval Group, showcasing French excellence, is the only industrial group with full command of the entire production process, from design to the building and maintenance of cutting-edge ships and submarines throughout their entire operational lives.
It was a highly emotional moment when the first Gowind® corvette was delivered to the Egyptian Navy at Lorient on 22 September 2017. In the words of its chief of staff, “The Gowind® corvettes designed by Naval Group fully represent the cooperation existing between France and Egypt, two nations pursuing their historical relationships. We are proud of them.”

“Completing this warship in thirty-seven months, from initial studies to final training, is an unprecedented performance in Europe, clearly demonstrating the capacity for innovation we now have in the construction methods and responsiveness of our Lorient shipyard,” Hervé Guillou declared.

The Gowind® 2500 corvette, now fully sea-proven, is a concentrate of the very latest technological advances, giving it great military capacity. The Setis® combat system, the corvette’s veritable nerve centre, provides full command of all sensors and weapons in real time. The Panoramic Sensors and Intelligence Module (PSIM) consists of the integrated mast with its various sensors and the operational centre as well as all the associated technical installations. As a result of this major innovation, integration and validation of on-board systems was fully completed, even before the platform was floated out.

Work is continuing at the Alexandria shipyard on the next three ships to be produced in the series.
In Malaysia, the first of the six corvettes on order was floated out by our partners at the end of August. The second combined mast/radome produced by Naval Group was transferred from Lorient to the Lumat shipyard to be fitted onto the PSIM’s steel block. Determining the line of fire – to accurately define the shaft line’s positioning – was also completed in mid-December. This high-precision operation was carried out jointly by the Naval Group teams and their Malaysian colleagues.
Charles de Gaulle aircraft carrier

The French Navy’s flagship went into dry dock on 8 February 2017 for its midlife overhaul. This is a unique challenge for Naval Group as prime contractor, with the aircraft carrier’s availability and the future of its military efficiency depending on a successful outcome. The work involves modernising the combat system, the aviation installations and the platform as well as carrying out more conventional maintenance on the ship. Meeting these challenges will also benefit French industry – stimulating a whole labour pool and a sector of the economy. It will also enable key skills to be retained, particularly in the nuclear and naval aviation fields.
In 2017, Naval Group celebrated 50 years of nuclear dissuasion and 45 years devoted to maintaining this capability. Backed by its unique industrial skills, particularly providing in-service support for the oceangoing strategic force, the group works tirelessly to ensure its ballistic missile nuclear submarines (SSBN) can maintain their presence at sea at all times.

At Brest and at l’Île Longue, 500 Naval Group staff members work solely on providing ongoing maintenance of the four SSBN vessels: Le Triomphant, Le Téméraire, Le Vigilant and Le Terrible. Naval Group is also carrying out preparatory operations for installing sea-to-land strategic ballistic missiles on board.

PASSING ON
AND UPGRADING SKILLS ARE MAINLY CARRIED OUT BY WORKING IN DUGS, SEAMANSHIP MENTORING AND WORK/STUDY PROGRAMS

SIX OR SEVEN PERIODS
OF UNAVAILABILITY FOR MAINTENANCE ARE MANAGED BY NAVAL GROUP EVERY YEAR

NOT A MINUTE’S LETUP
IN DISSUSSION SINCE THE LAUNCH OF THE ACCOUNTABLE
On 11 April in Toulon, Naval Group delivered the multi-mission FREMM Auvergne for the French Navy. This delivery of the Auvergne illustrates our ability to produce and deliver a series of frontline warships on schedule to meet our clients’ needs.

Naval Group is currently in the process of completing the FREMM Bretagne, which began sea trials in October, and is continuing with its assembly of the FREMM Normandie at a steady rate. Furthermore, work has started on the Alsace, one of the two FREMM ships with strengthened anti-aerial capacities scheduled for delivery before the end of 2022.

The technical shutdowns for the FREMMs in service took place one after the other, to our clients’ satisfaction: the Aquitaine, the Auvergne, the Provence and the Languedoc in Brest and Toulon, the Mohammed VI in Morocco and the Tahya Misr in Egypt. Software updates take place almost all the time: these new generation ships are highly digitalised and software evolves very rapidly.

The tactical simulator for training Egyptian sailors for this type of ship has also been set up in Alexandria. Finally, i-maintenance has been introduced for the disassembly and reassembly of the rudders and stocks on the Languedoc.
The first COSIN (integrated digital operational support centre) has been in service at Toulon since the end of 2017. It has been created around the notion of providing flexible and efficient services adapted to our clients’ needs. Its purpose involves monitoring the digital integrity of ships, tools and infrastructures, developing cyber-services, identifying needs and introducing new solutions such as remote diagnoses and assistance, intelligent maintenance and predictive maintenance.

Three consecutive launches of the new generation F21 heavy torpedo carried out at Saint-Tropez in 2017 were successful, bringing the torpedo closer to its qualification and subsequent entry into service. The F21 is swifter, more manoeuvrable and intelligent as well as benefiting from enhanced operational performance.

The integration work carried out by Itaguaí Construções Navais (ICN), on board the Riachuelo, the first in the series of Brazilian Scorpène® submarines, continued without any letup in 2017, and particularly since the weapons handling module was installed on board last March. Construction of the massive infrastructure in Sepetiba Bay has almost reached the 70% mark. The development of the four simulators has also been validated by the Brazilian Navy, meaning they are now ready to be transferred from Angoulême to Itaguaí.

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The Barracuda nuclear attack submarine program has been given fresh impetus. Four ships are currently being constructed in Cherbourg, with over 95% of the integration work on board the Suffren now completed. The combat system was developed at Toulon-Ollioules. At Nantes-Indret, the delivery, tests, assembly and pre-assembly of four boiler modules and propulsion units were conducted, while the equipment (torpedo tubes, mast, etc.) were fitted as standard at Angoulême-Ruelle.

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The major technical shutdown of the surveillance frigate Vendémiaire based in Nouméa called for extensive heavy infrastructure. Naval Group staff members from Brest and Singapore moved into the Devonport Naval base (Auckland Bay) in New Zealand for several months. With Naval Group as the prime contractor, they worked alongside teams from Babcock NZ Ltd.

Delivered to the Indian Navy in September, the submarine Kalvari went into active service on 14 December. This is the first submarine to have been entirely produced using technology transfer. This delivery demonstrates once more Naval Group’s ability to command complex programs on an international scale. At the same time, the Khanderi, the second submarine in the series, was undergoing its sea trials.

First major technical shutdown for the Malaysian Scorpène® submarines

The refit of the Tunku Abdul Rahman, the first to be carried out for the Malaysian Navy since delivery in 2007, began at the Kota Kinabalu naval base in January 2017. The submarine was subsequently relaunched on 15 December of the same year, marking a significant industrial milestone before commencing sea trials.

The SIMDAV, a technological concentrate

Naval Group has delivered a second visual defence simulator (SIMDAV) to the French Navy at Brest. The new equipment will enable naval action force crews to train under highly realistic conditions at Brest as well as at Toulon.

The technical shutdown of the frigate Makkah started in early 2017, with delivery to the Saudi Arabian Navy at the end of the year within the agreed timeframe and to the client’s satisfaction. This is the third and last Sawari 2 frigate to be maintained at the shipyard in the naval base at Jeddah under the terms of the ERAV contract.

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Naval Group stands out for its understanding of evolving operational needs and above all for the excellence of the technological solutions it makes available to navies throughout the world; thereby providing them with operational superiority.
In June 2017, Naval Group confirmed its status as a comprehensive architect in the aero-maritime field by achieving a European first. Taking place during its Naval Innovation Days, the group successfully coordinated the deployment of three types of drone: underwater, in the air and on the ground, via its 14®Drones mission system. During this demonstration, a suspicious vessel was detected, identified and neutralised in less than 20 minutes. At the same time, the group presented its docking station for submarine drones, developed in one year with innovative SMEs. This station is capable of recovering, immobilising and storing the drone, recharging and communicating with it, preserving it in an anticorrosion liquid and relaunching it for a new mission. This is a first stage, which has allowed Naval Group to resolve the various technological issues and begin to work on launching and recovering drones from a submarine.

Naval Group has succeeded in carrying out a campaign of trials on board the Dixmude Landing Helicopter Dock (LHD) ship. This allowed the Serval system (Schiebel Camcopter® S-100 drone) to be validated. This aerial drone is capable of carrying out surveillance and information gathering missions by using its on-board camera. Following this success, in July, the Defence Procurement Agency (DPA) notified Naval Group of the second phase of studies with the aim of deploying the drone on the first of several ships in the LHD fleet.

**AUSYRIS**

- More than 80 hours of autonomy during missions

**14®DRONES**

- 20 minutes to launch, detect, identify and neutralise a threat

**THE SDAM**

- 750 kilos delivered by air, payload of up to 150 kilos, 10 hours’ autonomy with a range of 100 nautical miles from the ship

**Drones: impressive maturity**

- More than 80 hours of autonomy during missions
- 20 minutes to launch, detect, identify and neutralise a threat
- 750 kilos delivered by air, payload of up to 150 kilos, 10 hours’ autonomy with a range of 100 nautical miles from the ship
The use of this aerial drone in an operational context was validated during a Corymbe mission in the gulf of Guinea.

On 29 December 2017, the DPA notified the Naval Group and Airbus Helicopters consortium of a technological study market in the field of rotary-winged aerial drones (SDAM marine aerial drone system). Its purpose is to study risk-reduction solutions followed by developing a demonstrator of the tactical helicopter drone system’s future capacity when carried on warships. This demonstration program will ultimately lead to tests being conducted from a French Navy ship.

Naval Group has also launched the Ausyris project with its partners Thales and the ECA Group. Working with the DPA, in the course of 2018, this aims to build a program designed to develop a first multi-mission military underwater drone demonstrator.
I-maintenance

Until now, ships’ missions were interrupted by regular technical shutdowns in order to carry out corrective and preventative maintenance.

With the Belhâra® frigate, Naval Group is relying on the digitalisation of its ships from the design stage onwards to meet navies’ demands for greater flexibility as far as maintenance is concerned in order to improve availability.

By having access to data on the ship’s condition and that of its physical and electronic components, it will now be possible to program technical shutdowns according to an assessment of needs rather than a predetermined maintenance schedule. Furthermore, the ship’s integrated capabilities enable operators to update the ships on-board software systems without interrupting the mission.

When a technical shutdown is required in spite of everything, the maintenance program itself is optimised via digitalisation, making it possible to reduce the amount of time spent in dock. By collecting the ship’s data under secure conditions, the COSIN (integrated digital operational support centre) is able to anticipate work to be carried out and its teams’ day-to-day organisation.

1,000 M² ARE DEVOTED TO MAINTENANCE ACTIVITY DIGITALISATION FOR THE FIRST COSIN IN TOULON

2,000 ITEMS OF EQUIPMENT CHECKED FOR CYBER-SECURITY IN ONE YEAR AT BREST AND TOULON
Cyber-security: anticipating threats

The digital, connected ship of the future, such as the Belh@rra® frigate, opens up fresh development and efficiency opportunities for clients and industrialists. This is achieved by automating tasks or extending on-board capacities, even though such an approach demands stronger protection, involving cyber-defence and resilience.

Naval Group has adopted an integrated cyber-policy, from initial concepts right up to the ship’s in-service support, personnel security and the security of suppliers’ systems. This covers the intelligent on-board systems, such as the combat and communications system, the ship’s automated steering, propulsion and energy production systems, right through to production and quayside facility management infrastructures.

The group is developing new technologies such as defensive IT protection and expanding operational capacities with solutions such as the COSIN (integrated digital operational support centre). Furthermore, Naval Group is working in partnership with academic cyber-security players as well as with innovative SMEs and start-ups.
The industrial application of enhanced reality

Enhanced reality is coming to the workshops and on board ship where, by using 3D spectacles, tablets or direct projections, staff members can be given accurate information to carry out their tasks under the best possible conditions. These cognitive assistance solutions contribute to having full technical command of situations and reducing non-quality sufficiently to improve traceability and establish conformity in real time for warships.

During the Laval Virtual exhibition in March 2017, the group introduced an enhanced reality application making it possible to view and monitor the progress of assembling equipment during work on building a ship. Currently being tested in situ at Lorient, this application is being developed within the framework of a cooperative project supported by the unique interministerial funds (FUI).
In particular, enhanced reality makes it possible to monitor and simplify maintenance and verification operations at the shipyard.

Naval Group is a systems designer and integrator also providing on-board cyber-security.
Collaborative innovation is a watchword for Naval Group. R&D is carried out within the group and extended to all company levels. Under the impetus given by the Department of Innovation and Technical Excellence (DIT), all programs and projects, sites and various industrial partners are concerned (large groups, ETIs, SMEs and start-ups). This collaborative dialogue makes it possible to swiftly give form to an idea, eliminate risks, speed up its development and implementation on board ships using new working methods and procedures, thereby thinking ahead towards a product’s industrialisation and potential for further development.

We will now focus on a number of examples illustrating this procedure in 2017.

Scientific advice to clarify the future

Set up in 2016, Naval Group’s Scientific Committee is made up of 15 acknowledged personalities from the world of science and research, most of whom have previously had little to do with the naval defence sector. It is precisely this fresh look at its research policy, its technical strategy and even its business models that the group is expecting from this scientific approach. “Our role is to help define Naval Group as its chairman, Joël Bertrand, director of research and special adviser to the chairman of the CNRS.

Hackathons, catalysing innovation

For the very first time, the group took part in the 2017 24 hours of innovation, organised in mid-September at 507 Fabhouse, the temple of Hutchinson’s open innovation. It also attended the Airbus hackathon in Nantes. Hackathons are based upon the principle of mixing, within a very limited timeframe, various profiles driven by a spirit of challenge around the subject under discussion. Naval Group’s own hackathon will be organised at the beginning of 2019.

The Open.Lab at Angoulême-Ruelle, a creative laboratory

The new collaborative workshop focusing on fast prototyping and collective innovation was set up in January 2017. Driven by a desire to combine production, design and R&D at a single location open to everyone, the initiative aims at making the Angoulême-Ruelle site an asset for the group and its future innovation. The space reproduces the path taken by a product idea: from defining the development strategy to the various stages of benchmarking the project, from computer-assisted design to electronic and electro-technical development, without forgetting digital manufacturing and prototyping in “sprint” mode. Open.Lab has all the site’s expertise to draw upon, from its Innovation and Technical Excellence (particularly the Technological Research team) to the skills available from innovative local SMEs, university partners and the digital sector.

A collaborative program to reduce the environmental impact of civil ships

In the context of the European Union’s H2020 project entitled “RAMSSES” (Realisation and Demonstration of Advanced Material Solutions for Sustainable and Efficient Ships), Naval Group will be heading a project to create two innovative prototypes. Bringing together 37 partners, including major naval shipyards and laboratories engaged in maritime research, RAMSSES aims to accomplish and demonstrate via experimental campaigns that new advanced material solutions used in ship design can reduce its environmental footprint. Apart from its determination to defend Naval Group’s place in the field of the energy economy, Research also demonstrates its ability to attract external funding for financing its research.

The Joint Laboratory of Marine Technology with the Nantes Central School and University of Nantes; The Gustave Zédé Laboratory with the ENSTA Advanced Technical School in Brittany

The joint laboratory joins together the central school and universities of Nantes, the Gustave Zédé Advanced Technical School, naval shipyards and laboratories engaged in maritime research, technological research institutes and universities, in a collaborative program.

Ramsess aims to accomplish and demonstrate via experimental campaigns that new advanced material solutions used in ship design can reduce its environmental impact.

Naval Group is a stakeholder in three competitive clusters created to help innovative projects make the transition from R&D work to industrialisation on buoyant markets (Mediterranean Sea Cluster, Brittany Atlantic Sea Cluster and the EM2C Cluster)

The laboratory devoted to system engineering and artificial intelligence with the Paris Tech Ensta, the laboratory devoted to processing sonar information with the University of Toulon-Aix-Marseille

Naval Group belongs to IRT SystemX, a technological research institute (with French governmental approval (IRT Jules Verne, IRT M2P and IRT SystemX)).
Naval Group finances theses and various in-house and collaborative R&D projects which contribute to advancing the state of the art in line with evolving threats. It also designs and produces some of the most innovative and quietest ships on the market.

The company is currently interested in the propagation of sound in water and its environmental impact, the issues of sound travelling through water and furtiveness, the new acoustic materials that could be used for cladding future submarines and vibroacoustic modelling applied to creating the ship’s digital twin.
On-board digital architecture

To deal with the increasing digitalisation of our ships imposed by the latest threats and challenges, Naval Group is developing a flexible, scalable solution capable of dealing with the acceleration of technological cycles.

Afloat Common Computerized and Evolutive Secured Systems (ACCESS), developed by Naval Group, consists of regrouping and rationalising ships’ IT resources, currently disseminated throughout the ship (network, calculation, storage, etc.) into powerful, rationalised, on-board, scalable, cyber-safe and maintainable computing centres.
Naval Group makes corporate social responsibility (CSR) the cornerstone of its projects. It is committed to an ongoing improvement approach for its economic growth, its human resources policy and also for reducing the impact of its activity and the footprint its products make on the environment.
Naval Group, driving French industry in terms of jobs, research and development, considers that the aim of responsible growth goes hand in hand with the growth and profitability of its activity. This is why the group is aiming to be among the best companies in its field of activity in terms of compliance, encouraging stakeholders to adopt its values and make its day-to-day commitment to its social responsibility more efficient and more apparent.

Naval Group took part in a peer review organised by the United Nations Global Compact network in April 2017. The initiatives carried out by the group enabled it to earn the Global Compact Advanced qualification for the third year running. Only around 60 other companies in France have reached this level of distinction.

For Naval Group, compliance means having a competitive edge which allows us to meet the highest international standards and thereby satisfy our clients’ and future clients’ expectations. In 2017, the group pursued and extended its effort to strengthen its capability, emphasising its determination to prevent corruption in all shapes and forms. The group’s ethical organisation and compliance was reiterated in April when it set up a Department for Ethics, Compliance and Group Governance (DECG), managing a network of Compliance Officers distributed throughout the group’s sites, its various activities and subsidiaries in France and abroad.

The maritime sector is full of economic promises but remains a fragile environment. Fully aware of this reality, the group is dedicated to addressing the environmental issues relevant to its activities as well as to its products.

To produce some of the world’s most complex products, Naval Group can draw upon its teams’ highly developed skills and is committed to preserving the quality of life in the workplace, employing staff members with handicap issues, gender equality in a professional context, job openings for young people and seniors, etc. Furthermore, the group generates tens of thousands of highly qualified indirect jobs which contribute to our country’s industrial excellence. Naval Campus, a project set up by Naval Group and the Brittany Regional Council, aims to bring together regions, industrial and educational actors with the aim of meeting the needs of the naval sector.

Naval Group’s commitment to responsible purchasing is just one aspect of its ongoing drive for improvement steered from the very top. Naval Group implements its commitment via very tangible operational initiatives and active participation in initiatives and activities relating to its sector: GICAN, CEDEF, strategic committee, Ocean centres, SME Pact, the charter encouraging innovative SMEs, SME defence plan, etc. Not only does the group carry out an annual assessment of its suppliers, particularly with regard to governance criteria, compliance, safety and the environment, it also carries out an annual satisfaction survey using an extensive panel, enabling it to record ongoing improvement. Naval Group has been awarded the Responsible Supplier Relations label since December 2014.
Underpinning partner countries’ sovereignty

Naval Group is currently working on industrial programs for established clients on the five continents and helping them with the modernisation or restructuring of their fleets by developing industrial partnerships with local actors. Technology and skills transfers, backed by competitive tenders, are strongly leveraging the group’s presence on international markets. They also act as a transformational tool for our industrial processes that benefit all group stakeholders, including in France.
In April 2017, Naval Group signed an agreement concerning the quality of life at work. This was based on setting up expression groups within the entities to improve collective functioning, industrial performance and staff members’ well-being, further development of this experimental approach and participation from the management. A national committee, together with similar local bodies, were set up to monitor and take part in deploying the agreement. Among other things, this will be translated into manager training and implementing a managerial behavioural charter. The methodology for assessing the quality of life at work was deployed at all sites in 2016 and 2017. More than 120 assessment groups, each made up of 10 to 12 staff members, came together at the various sites to assess the risks facing their entity and setting up preventative action plans.

According to a study carried out by Randstad and published in March 2017, Naval Group is France’s favourite company. The survey covered the most attractive employers, who were assessed by a panel of several thousand people located in 23 countries. This recognition illustrates the group’s growing reputation, its evolution and the work its teams carry out to further high-technology.

Maintaining and passing on design and construction expertise is a constant challenge for Naval Group which must meet the particularly stringent demands imposed by our activities. Managing forecasts of jobs and skills plays an essential role in accurately assessing our ongoing needs, making it a factor on which the growth of our competitiveness depends. This was incorporated into the company agreement signed in spring 2017. A great deal of our training is focused on seamanship, integrating new arrivals via discussions and creating a digital library of knowledge organised into films demonstrating technical procedures. Work/study programs serve to maintain skills acquired by training young people who subsequently join the company with a permanent contract. This also demonstrates social responsibility, and is the reason why the company has included it in its skills management agreement.

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An analysis of the socio-economic impact Naval Group has at all its sites in France was carried out in 2017 based upon the much respected studies of the INSEE Institute. Naval Group has entrusted the independent consultant Utopies with this task. The survey was based on in-house data, macroeconomic French indicators and Local Footprint® methodology. It focused on three main financial flows injected into the economy by the group: the site’s expenditure (mainly purchasing) paid to its suppliers, salaries paid to staff members and taxes generated by local activities. These flows make it possible to quantify direct impacts (the site’s added value), indirect impacts (economic benefits) and induced impacts resulting from activities (family consumption and public spending) sustained by the salaries and taxes paid by the site or its suppliers. For example, for each job at the Naval Group site in Lorient, almost five other additional jobs are sustained in France, more than a third of them in Brittany. The site’s activity made it possible to generate a total wealth of 663 million euros in France in 2017.

The Lorient site’s activity was able to sustain

9,107

Direct, indirect and induced jobs in France

The site accounts for

16%

Of all jobs sustained by Naval Group in France

For €1 of wealth generated by the site, an additional

€3.3

Are generated in the French economy
Having adopted a strategy of reconquest and enjoying its associated benefits since 2015, the group is advancing on the right path, in line with its stated perspectives – thanks to the commitment and confidence of everyone – partners and staff members alike.
THE MANAGERIAL TEAM

A tightly-knit and supportive team to speed up our internationalisation.
In France, and worldwide, Naval Group aims to establish its societal approach based on collaboration and collective initiatives with all the stakeholders involved, via its activities in the naval defence and energy sectors.

AN ECOSYSTEM OF SHARED VALUES

- **PUBLIC BODIES, INSTITUTIONS**: Involving them in the decision-making process by taking their local constraints into account.
- **STAFF MEMBERS**: Giving them the first opportunity to leverage company performance.
- **CLIENTS**: Creating a favourable context to satisfy their expectations.
- **SCHOOLS, UNIVERSITIES**: Providing expertise for current and future generations.
- **SCHOOLS, UNIVERSITIES**: Providing expertise for current and future generations.
- **INDUSTRIAL PARTNERS**: Engaging in win-win cooperation.
- **MEDIA, JOURNALISTS**: Creating a positive dynamic of propagation and influence.
- **SECTORS OF EXCELLENCE AND INNOVATION**: Using cutting-edge technologies to make a real difference.
- **SUPPLIERS**: Unitating them around shared targets for growth.
- **SHAREHOLDERS**: Fulfilling missions entrusted by them by relying on their support and expertise.
A geopolitical climate encouraging naval defence in a context of keener competition
Securing regions, transportation and communications when access to resources increasingly involve having command of the seas is once again drawing nation states into struggles for power. Tensions are even building in the oceans themselves, as we are seeing in the China sea, the Arctic and Indian Ocean. The effort of reinforcing naval military resources resulting from this global situation opens up perspectives for considerable growth which will reach beyond the spheres of the historical players.

More and more actors are moving into the naval defence market as it becomes increasingly international. These include major European industrials, but also Chinese, Japanese, Korean, Russian and Turkish players. These competitors’ rapid growth is financed by the armament programs of their home country. Most of them also benefit from low production costs.

A swiftly changing technological landscape
At the same time, new technologies, some of them even coming from the civil sector, are steadily gaining greater importance in the naval world. This is particularly true in the fields of cyber-defence, drones and upgrades to missile systems. The resulting challenge involves reconciling the long cycles that characterise the naval sector with those dominating technological fields which are extremely rapid.

A sovereignty mission
In this shifting environment, Naval Group must also continue to pursue its primary mission of being an industrial partner of excellence serving the French Navy. To this end, it designs, builds and performs in-service support of the nuclear submarines and a large part of the surface fleet, to conserve its superiority.

This mission’s success depends upon preserving its outstanding, rare and varied expertise associated with a complex ecosystem of suppliers. Naval Group also constantly strives to keep its programs’ costs, quality and lead times under control while at the same time committing significant resources to R&D and innovation in order to produce the ship of the future, which will be digital, cyber-protected and connected.

A strategy of profitable growth
Taking all these trends and imperatives into account to preserve its skills, capacities for investment (R&D, industrial resources) and to increase its world leader ranking, Naval Group must accelerate its development in the international arena. This will enable the group to realise its strategic vision of being a European leader in naval defence with a global reach and the best possible profitability. This strategy is built around three ambitions: to gain strength, extend its network and gain more partners.

Major achievements
Ramping up the Australian program in 2017 reflected this strategy, as did the creation of a joint company with a local industrialist in Saudi Arabia, and the French and Italian announcement of an initiative designed to open up the means of progressively creating an alliance between the two countries in naval defence. The beginning of these discussions, announced by the French and Italian governments on 27 September 2017, must allow Naval Group and Fincantieri to develop internationally in the context of keener competition on the market, while allowing the two groups to continue their respective missions serving the navies of both countries.
Naval Group’s engineers, researchers and experts are meeting the maritime technological challenges of the future.

Naval Group provides in-service support for surface ships, submarines and equipment.

Naval Group carries out the dismantling and deconstruction of the French Navy’s nuclear submarines.

Naval Group offers its clients a comprehensive solution including training and advice on all aspects of naval defence related skills.

Naval Group’s industrial sites produce, assemble or integrate high-technology naval solutions.

Naval Group fully commands all stages of a ship’s life cycle.
For the third successive financial year, results for 2017 record an increase in our revenue as well as an improvement in our net margin and operational profitability.

**Income**

<table>
<thead>
<tr>
<th>Year</th>
<th>Consolidated Annual Revenue (IN €)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3.03</td>
</tr>
<tr>
<td>2016</td>
<td>3.19</td>
</tr>
<tr>
<td>2017</td>
<td>3.69</td>
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Its 15.9% growth compared with 2016 is largely due to the major national construction and service programmes: FREMM, Barracuda, Charles de Gaulle and submarine maintenance. Internationally, Brazil, Egypt and Australia have been powerful driving forces for the growth of our activity.

**Geographical Breakdown of Revenue**

- **65%** in France
- **35%** internationally

**Net income**

- **€172.7 million**
- EBITA (Earnings Before Interest, Taxes, Depreciation and Amortization) stands at €172.7 million. This significant growth, higher than that of the revenue, results in the operational margin rising even further, from 3.2% in 2016 to 4.7% in 2017.

**Group workforce**

- **13,429** Full Time Equivalents (FTE) at the end of 2017

**Jobs**

- **40,000** Jobs in the French Naval Sector

Consolidated net profit share for the group amounted to €142.2 million euros, up nearly 50 million euros compared with 2016. This strong momentum reflects the operational improvement of all naval programs and the effectiveness of the initiatives taken within the framework of the industrial and social pact. These results were nevertheless weakened by a depreciation of the value of certain assets belonging to our subsidiary Naval Energies. 2017 has helped to create new jobs, increase investment and strengthen our competitiveness, an essential condition for growing our volume of business with the French Navy and our international customers.
BECOME IMMERSED IN A WORLD OF HIGH TECHNOLOGY