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# NAVY REFERENCES




**600**  
**Ships**  
**Propelled**

# MARINE

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**Over 600 ships are propelled with our technology.**

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Through the Indar Drive Products Concept , we unite power with control, developing advanced propulsion and auxiliary generation systems for ships, effectively, silently, without vibrations and respecting the environment.

Immerse yourself in the incomparable advantages of our marine power system.

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# OUR VALUE PROPOSITION

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## OVER 75 YEARS OF EXPERIENCE

### A history of continual improvement

Since 1940, Indar has never stopped dreaming, imagining and undertaking projects.

In these 75 years we have wanted to do our bit by keeping alive the values that have made us great: our commitment to the customer and the excellence of our products.



# OUR VALUE PROPOSITION

## EXPERTS IN SILENT TECHNOLOGY

### Vast experience

Indar, with a list of 21 references, is a market leader in silent technology references.



# OUR VALUE PROPOSITION

## WORLD CLASS LABORATORY

### The power electronics laboratory

INDAR's R&D team has developed a combined power electronics and rotating electrical machine laboratory, considered a milestone in its class. This laboratory enables us to see how the electrical machines operate once installed at their final destination, allowing for instance to test them in all types of environmental conditions.

Main characteristics:

- Full load tests up to 8 MW.
- Back to back test configuration up to 65 MW.
- The capacity to carry out LVRT (Low Voltage Ride Through) tests.
- Self-generated network; 50/60 Hz 20 MVA.



# OUR VALUE PROPOSITION

## PROVEN IN HOUSE TECHNOLOGY

### Our own technology

100% in house design from the assessment till the final FAT, the equipment in our proposal is designed and build same manufacturing gate to mitigate any risk.

R&D also in house: vibrations, insulation experts, components life cycle analysis, etc.

- Our own technology
- R&D department dedicated to create knowledge and to define own standards.
- Important development capacity and equipment testing.

Nowadays, investment in R&D in INDAR accounts for approximately 3.5% of the company's total turnover.



# OUR REFERENCES

## NAVAL



# OUR REFERENCES

## ARCA

### Project Name:

Coast Guard (Ministerie van Verkeer en Waterstaat, Directie Noordzee - The Netherlands).

### Project Scope:

Design, manufacture and certification of the main propulsion and bow thruster motors.



# OUR REFERENCES

## LUYMES A803 & SNELLIUS A802

### Project Name:

Oceanographic Survey Vessels (Hydrografische Dienst – Royal Netherlands Navy).

### Project Scope:

Design, manufacture and certification of the main propulsion and bow thruster motors.



# OUR REFERENCES

## BIO HESPERIDES – A33

### Project Name:

Buque Oceanográfico Hesperides A33 (CSIC – Spanish Navy).

### Project Scope:

Design, manufacture and certification of the main propulsion system. Since then and up to date **Indar is the service provider of the Spanish Navy** (more than 25 years).



# OUR REFERENCES

## CANADIAN COAST GUARD

### Project Name:

3 x Offshore Fisheries Science Vessels (CCG OFSV#1, #2, #3)  
(Canadian Coast Guard – Canada)

### Project Scope:

Design, manufacture and back to back testing on the main propulsion systems to comply with the strict noise (both acoustic & structure borne) requirements: the vessel being built according to silent class notation.

Over 21 references built up to date classed with Silent Class Notation.



# OUR REFERENCES

## GUIDED MISSILE FRIGATES

### Project Name:

Guided-Missile Frigates SIGMA 10514 PKR – (Indonesian Navy).

### Project Scope:

Design, manufacture and certification of the motors for the main propulsion system. Most of the time the ship is propelled by these electrical motors with low underwater noise, low emissions, and low faults risk. The first vessel was successfully completed its sea trials as of 7 September 2016 and delivered in January 2017.



# OUR REFERENCES

## LONG RANGE PATROL FRIGATE



### Project Name:

Mexican Navy long-range patrol vessel – SIGMA 10514 (Mexican Navy).

### Project Scope:

Design, manufacture and certification of the motors for the main propulsion in CODOE arrangement propulsion, 10000 kW maximum continuous rating (MCR) diesel engines, two 1300 kW electric motors, two double input / single output gearboxes, and two 3.55m controllable pitch propellers.



***Indar***

***Ingeteam*** *Group*

*Your driving force*