RINA

Marine

We simplify complexities through our expertise, making what seems impossible, possible.

Make it sure, make it simple.

Marine

Business areas

New buildings & testing

Ships in service

Value-added services

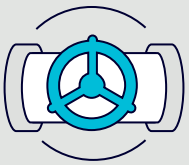
Decarbonisation

Reference sectors

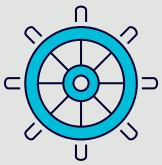
Cargo ships

Passenger ships

Naval



Offshore



Yachting

Today, the marine sector represents over 1/4 of our turnover, making us one of the top-ranking marine classification societies in the world.

Established in 1861, RINA is a founding member of IACS (International Association of Classification Societies) and operates on behalf of 116 flag authorities. In addition to the provision of classification and statutory certification, we deliver value added services to the ferries industry and are rated among the top performing classification societies, by both the Paris and Tokyo MOUs. Ship classification has been our core business from the beginning, and today it makes RINA one of the top-ranking marine classification societies in the world. In the last three years our fleet has grown at rates of over 10% thanks to the classification of existing ships and the delivery of new buildings. Decarbonisation will be driving the shipping sector for years to come, and RINA plays a proactive role in this evolution, bringing our multidisciplinary skills to the industry to build a sustainable future. Technical competence, attention to quality and focus on innovation are the pillars that allow us to support shipping on the path to digital transformation and to achieve the CO_2 emissions reduction objectives established by the IMO, and we work with designers to verify compliance with the applicable rules of dual-fuel vessels and of novel concept designs incorporating new fuels such as hydrogen or ammonia, allowing for an increase in efficiency and performance which equates to fewer emissions.

New buildings & testing

A new ship intended to sail internationally must hold a valid class certificate, issued upon verification of its compliance with applicable class rules and standards.

RINA constantly develops and updates rules and standards to cover the classification of a wide range of ship types and the most innovative design solutions.

The main steps through which we perform the newbuilding classification process are design appraisal, aimed at verifying that the ship design is compliant with the applicable RINA Rules for the classification of ships, and construction surveillance to assess whether the ship is built in conformance with the design approved by RINA and the construction requirements set by the relevant RINA Rules.

RINA Rules grant additional class notations to vessels complying with particular standards for special features, thus providing added value to a ship's stakeholders. Our goal-based approach, supported by direct calculations and high-tech dedicated tools, can facilitate the conception of efficient and safe ships that meet regulatory requirements and owner's expectations in a cost-effective manner.

Services

Drawing approvals

Supervision during construction

Certification and type approval of components

Factory acceptance testing

Main projects

GRIMALDI RO-RO CARGO PROJECTS
Client: Grimaldi
Location: South Korea

Supervision during construction of 6 new multipurpose Ro-Ro ships at the Hyundai Mipo Dockyard Co. Ltd in Ulsan. The new G5-class ships, equipped with hybrid exhaust-gas cleaning systems for the abatement of sulphur and particulate emissions, will be able to transport 4,700 linear meters of rolling freight, 2,500 CEU (Car Equivalent Units) and 2,000 TEU (Twenty-foot Equivalent Units).

FINNLINES SUPERSTAR RO-RO PAX SHIPS
Client: Finnlines
Location: P.R. China

Supervision at the China Merchants Jinling Shipyard during construction of two 65,000 GT Ro-Ro Pax vessels ordered by Finnlines. With a length of 235 meters and capacity of 1,100 passengers, the vessels will be fitted with onshore power supply technology enabling emission-free operations in port.

LARGEST EVER CRUISE SHIP BUILT IN CHINA
Client: Carnival Group
Location: P.R. China

Supervision during construction of a 140,000 GT cruise ship, which will host 6,500 people (passengers and crew). The cruise project will be built according to the highest standards ever applied for environmental protection in China with the additional RINA 'Green Plus' and 'HVSC' (High Voltage Shore Connection) class notations.

ADVANCED CABLE-LAYING VESSEL
Client: Prysmian Group
Location: Romania

Supervision during construction of a 170-meter cable laying ship, able to lay cables in water depths up to 3,000m, built by Vard at one of its shipyards in Norway, with the hull fabricated at Vard Tulcea in Romania. Two 7,000 and 10,000 metric ton carousels enable reduced transportation time from the factory to site for overall improved project efficiency. The vessel is equipped with DP-3 positioning and seakeeping systems and is powered by engines that reduce NOx emissions by 85%.

Ships in service

RINA Rules for the classification of ships help ensure that vessels are maintained and operated in such a way as to minimise the risks to life, the environment, and property, and have been developed to cover different categories of marine vessels including merchant ships, military vessels and yachts.

In classifying ships, we offer a structured international network of more than 550 surveyors available to perform requested surveys worldwide working from over 90 exclusive offices and survey stations across the globe. We can perform remote class surveys thanks to advanced software that we have developed specifically for marine inspections, can issue electronic certificates to ships in accordance with IMO standards.

Today, the RINA classed fleet numbers of 7,500 ships, for more than 60 million GT, and we are the number one classification society for the ro-ro sector. Furthermore, thanks to our free 'Leonardo INFO' software/app, clients can access their ship survey status, certificates, and survey reports at any moment and from any device.

Services

Classification

Statutory certification

Additional class notations

Training

Development of rules

Main projects

LIVE STREAMING REMOTE TECHNOLOGIES

Client: Various
Location: Worldwide

In June 2020, RINA performed the world's first statutory and class annual surveys using remote technologies on the 'Cielo di Gaspesie' bulk carrier, owned by the d'Amico Group. On completion, the LISCR (Liberian Registry) authorised RINA to certify the vessel. This new tool can support ship owners in managing critical situations caused by logistical problems linked to the position / port where the ship is located, saving money and time caused by the stoppage of the vessel.

SUSTAINABLE SHIP NOTATION

Client: Various
Location: Worldwide

RINA developed the new 'Sustainable Ship' additional class notation, assigned to ships meeting specific targets beyond those set by regulatory bodies in terms of noise and vibration onboard and underwater, environmental pollution, greenhouse gas emissions, seafarer working and living conditions, and the prevention of possible outbreaks of infections onboard.

NAVY CLASSIFICATION SERVICES

Client: Various
Location: Worldwide

RINA develops and periodically updates voluntary classification rules tailored to the specific needs of naval ships and submarines with the purpose of supporting navies in demonstrating the quality and safety policies adopted for their ships and crews. We provide classification services for all types of vessels, from small RHIBs to aircraft carriers, corvettes, frigates, LPDs, fleet tankers, mine countermeasure vessels and submarines.

YACHT CLASSIFICATION

Client: Various
Location: Worldwide

RINA has set up a dedicated network of experts for the classification and provision of added-value services to the yachting sector. Our dedicated team operates worldwide, from Southeast Asia to the Americas, and we are a trusted partner across the yacht lifecycle, from design to construction, operation, conversion and recycling.

Value-added services

Documentary evidence of the ship's structure

Recognised by oil majors and vetting companies, CAP (Condition Assessment Programme) provides documentary evidence of a ship's structure, machinery and plant conditions for third parties involved in its operation. For oil tankers, the procedure is continuously updated to respond to industry needs, it is recognised by RightShip for bulk carriers and specific CAP criteria are also developed for specialist ship types, such as LNG carriers and cable laying ships.

Leonardo Info

Shipowners and managers can access updated information relevant to their classed ships through the website https://www.leonardoinfo.com. It includes the 'EASY' messaging system for smoothly planning class and statutory surveys and assists shipowners and ship managers in monitoring due dates and recommendations, as well as notifying users of the entry into force of new rules and updates.

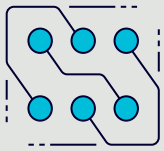
Novel technologies

RINA offers a series of assessments and verifications to ensure that a novel technology meets the specified requirements for its intended service, so that a level of safety in line with the current marine industry practice is provided. The new design is subject to a series of risk assessment techniques, to determine if the concept provides acceptable levels of safety in line with current marine industry practice, requirements and standards.

Systems

Novel technologies

Leonardo Info



Condition Assessment Programme

Main projects

CONDITION ASSESSMENT PROGRAMME (CAP)
Client: Stolt
Location: Netherlands

Our dedicated team of experts carried out CAPs on board 40 Stolt vessels. CAP is an assessment tool designed to assign vessels with a rating based on the current ship condition, independently of classification and age. Under the RINA CAP, vessels are assigned a rating of between 1 and 4, depending on the results of an examination of structure, machinery, systems and equipment. RINA is recognised as a CAP provider by the most important oil majors and vetting companies.

BZERO PROJECT
Client: Baglietto
Location: Italy

RINA is providing safety assessment and inspection services to Baglietto for BZERO: a three-year project to increase the electric cruising range of vessels in zero-emission mode by integrating hydrogen fuel cell technology on a hybrid or diesel-electric platform on board Baglietto yachts. The system involves the implementation of a hydrogen production module which, using filtered and deionised seawater, produces hydrogen with 5.0 degree of purity at a maximum pressure of 35 bar through a system of AEM-type to produce as much green hydrogen as possible. RINA will follow and validate every single implementation phase of the process until the final certification of the system.

LEONARDO INFO
Client: Various
Location: Worldwide

Leonardo Info is continuously updated to satisfy new client requirements. An app can be installed on mobile devices and, in addition to standard functions such as consulting survey status, certificates and survey reports, in order to reduce the workload for crews during RINA's presence on board, it is now possible to interact with RINA surveyors to provide technical documentation in advance of surveys.

CONDITION ASSESSMENT PROGRAMME (CAP)
Client: Thenamaris
Location: Greece

Our dedicated team of experts carried out CAPs on board 39 Thenamaris vessels. The team can carry out CAPs on various vessel types including oil and chemical tankers, gas carriers etc., for the most important global oil majors. The contribution of the Greece Plan Approval Centre was very valuable for the CAP project, as they are in charge of fatigue analysis as well as SCAP (Structural Condition Assessment Programme).

Decarbonisation

Decarbonisation is the ultimate challenge facing the shipping industry. One solution that can be applied as of today, and which is capable of fully meeting the environmental targets set by IMO for 2050, is the progressive transformation of LNG (Liquified Natural Gas) to hydrogen onboard a ship through the steam methane reforming process. The hydrogen produced can be used directly to power fuel cells, or in a fuel mix with LNG in internal combustion engines. This way there is no need for the supply (bunkering) and storage of hydrogen onboard a ship, while the ship relies on a low-cost and abundantly available fuel such as LNG.

Ship owners can decide how far they wish to position themselves ahead of compliance and competition and achieve the required production of hydrogen / reduction of CO_2 emissions at the required time, following a well-structured plan.

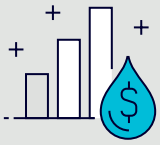
The reforming process also produces CO_2, which can be liquefied from the cryogenic stream of LNG before it enters the reformer. The CO_2 can then drain and be stored in a separate tank, to be used either as inert gas onboard tankers, or delivered ashore to produce syn-methane, thus triggering a recycling economy, where this syn-methane is supplied as fuel to ships.

Services

IMO DCS, EEXI, CII

EU MRV, (ETS, EU maritime fuel)

Fuel-saving solutions



Unconventional fuels-based designs

Alternative propulsion sources

Main projects

VLCC DESIGN
Client: in cooperation with SWS yard
Location: China

RINA carried out the approval in principal of a new VLCC tanker hull geometry offering reduced resistance. The AIP concept is a risk-based approach to classification, that allows for new designs and novel concepts to be validated with safety equivalencies. A distinguished maritime research institute had carried out extensive optimisation, and the results were positive and as expected. This same project will serve as a platform for the application of a steam methane reformer for the reduction of CO_2 emissions to meet IMO 2050 standards.

AIR LUBRICATION SYSTEM
Client: Grimaldi Group
Location: Italy

RINA validated an in-depth study related to the calculation of the Energy Efficiency Index of GG5G-class (Grimaldi Green 5th Generation) Ro-Ro vessels built for Grimaldi Group. They have better CO_2 emission intensity performances than previous generation ships and are equipped with batteries, hybrid propulsion, and an air lubrication system under the keel which creates a carpet of bubbles to reduce hydrodynamic resistance.

MR TANKER DESIGN
Client: FKAB
Location: Sweden

This project applied hybrid propulsion with an internal combustion engine propelling the ship, together with fuel cells powered by hydrogen produced by a steam methane reformer. RINA carried out the approval in principal for the client, with extremely positive results highlighting the potential of the concept.

NEWCASTLEMAX BULK CARRIER
Client: SDARI
Location: P.R. China

RINA has been tasked with the approval in principle of a project that will see a steam methane reformer installed onboard a 209,000 DWT bulk carrier. Unlike tankers, bulk carriers do not have the possibility of installing tanks and equipment on deck, so this project is looking at practical solutions relying on engines running on a progressively increasing energy input from hydrogen. Vessels can be delivered as ordinary DF ships, while 5 and 10 years after delivery, the necessary sections of the reformer can be installed for the required production of hydrogen, the use of which secures the progressive reduction of CO_2 emissions in line with international regulations.

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RINA consists of the parent company RINA S.p.A., the holding which controls the main sub-holdings RINA Services S.p.A. and RINA Consulting S.p.A. In order to ensure compliance with the applicable recognition, authorization, notification and accreditation rules, including those relevant to the management of impartiality, RINA has adopted a governance and organizational model. According to this model, the sub-holdings are subject to direction and co-ordination by the holding in the finance, administration, strategic, organizational, managerial and business continuity fields, while technical and operational decisions remain under the exclusive responsibility of the sub-holdings and their controlled companies. The strict separation of duties in the governing bodies and the impartiality risk assessment, which identifies and manages the impartiality and conflict of interest threats coming from the company relations, ensure compliance with the applicable impartiality rules.

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