

RTSYS

Underwater Acoustics & Drones



COMPANY PROFILE

ENHANCING TRUST UNDERWATER

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This catalogue is connected!



When you see this Icon please scan the page with your QR code reader and watch a video.

4 SECTORS, 1 SPECIALIST

PASSIVE ACOUSTIC MONITORING (PAM)

From post-processing (recorders) to real-time monitoring (buoys) and multiparameter assessments (stations), we provide a wide range of solutions for marine biologists and PAM operators.



AUTONOMOUS UNDERWATER VEHICLES (AUV)

Our AUV range can clear various kind of missions, be it for Navies or Research Institutes all over the world. Various payloads can be hosted such as DVL, magnetometers, side-scan sonars and any other payload, sensors and probes according to customers' needs.



ANTI-SUBMARINE WARFARE (ASW)

RTSYS products are delivered to Navies worldwide for acoustic systems tests and training, torpedo firing exercises and acoustic signature measurements.



MINE COUNTERMEASURES (MCM)

Our knowledge in acoustics helps to provide cutting-edge technology and led us to develop several sonar and navigation systems for divers. These diverheld devices can be either used for mine and UXO clearance missions, or for Search & Rescue operations in shallow and cloudy waters.



RTSYS

AT A GLANCE



2010

CREATION
OF THE COMPANY



+30%

NEW HIRE
EVERY YEAR



50%

EXPERTS,
PHD & ENGINEERS



70+

COUNTRIES
WORLDWIDE PRESENCE



5000m

**DISTANCE OF UNDERWATER
COMMUNICATION WITH OUR
ACOUSTIC PATENT**



24/7

**COMMITMENT TOWARDS
OUR PARTNERS
AND CUSTOMERS**



INNOVATION AS A KEYSTONE

RTSYS constant growth is also linked to its innovation developed in partnership with Navies and Research Laboratories.

DRIVEN BY ACOUSTICS

Everything we do is based on Acoustics so each of our device can work together. Acoustics is our DNA and made over the years our reputation worldwide.

RTSYS

MULTIDISCIPLINARY SKILLS

We aim to address various stakeholders whether be in the Civil world (offshore platforms, MRE, scientists and universities) or Navies who praise our reactivity and efficiency.

LONG-TERM VISION

Our efforts and vision are part of a long-term strategy which is rewarding those who rely on underwater technology in the near future.

RTSYS stands out from the crowd thanks to its innovation developed in partnership with navies and research laboratories

A decade of research and development combined with a close cooperation with the French Navy have enabled RTSys to develop innovative solutions for anti-submarine warfare (ASW), Mines Counter Measures (MCM), passive acoustic monitoring (PAM) and autonomous underwater vehicles (AUV).

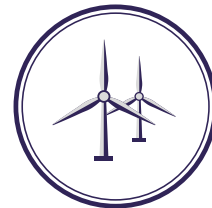
OUR CUSTOMERS



DEFENSE



SCIENTIFIC RESEARCH



OFFSHORE FIELDS

ABOUT US

R&D

R&D is focused in two areas: acoustic products & autonomous underwater vehicles with engineers skilled in signal processing, analog and digital electronics design, embedded software and mechatronics.

PRODUCTION

RTsys manufactures maritime systems, from small quantities to industrial production up to thousand units per year.

SALES

RTsys promotes and supplies its complete range of solutions through a worldwide network of distributors.

SEA-TEST BASE

Located close to the Atlantic Ocean in Brittany, RTsys owns a sea test base and two boats, enabling a total independence for in-situ trials and customers' acceptance tests every week.



CORE TECHNOLOGY

The "Powered by SDA" core is used in all RTsys products. The SDA board is full of cutting edge technology for active and passive acoustic applications. It offers substantial calculations capacity in a compact and portable format whilst remaining low powered. Used in conjunction with a Linux operating system, SDA board remains a strong ally thanks to its high calculation capacity, its compact size and its low energy consumption.

POWERED BY SDA[®]

SDA TECHNOLOGY

- Wide range operating power (500mW – 3W)
- Raw power 7 GFlops / 266 GMACS
- Linux operating system
- Synchronous multichannel transceiver (16 RX /4 TX)



SIGNAL PROCESSING

- Sonar signal
- Underwater acoustic communications



ELECTRONICS AND EMBEDDED SOFTWARE

- Real-time on-board systems (CPU/FPGA/GPU)
- Analog and power electronics



UNDERWATER DRONES

- Hydrodynamic and mechatronic design
- Integration of sensors and acoustic payloads





Marine Strategy Framework Directive
MSFD
Compliant
Compliant

QUALITY & ACKNOWLEDGMENTS

RTsys relies on a stringent quality policy at every level. The company is ISO 9001 accredited ever since July 2012 and our quality policy is based on this certification's guidelines. This namely involves frequent compliance audits and corrective actions as well as permanent improvement to keep customers' satisfaction.



INTERNATIONAL STANDARDS ACKNOWLEDGE RTSYS AS MAIN ACTOR IN ACOUSTICS

- **NPL & PLOCAN** research and calibration institutes consider RTsys systems as one of the current best references to answer to the Marine Strategy Framework Directive requirements.
- **TNO** has qualified the calibration and the calculation methodology of current RTsys systems as respecting international standards set up.



PAM RANGE







RESEA

VERSATILE MULTI-HYDROPHONE RECORDER

- Up to 4 hydrophones inputs
- Broadband: from 3 Hz to 625 kHz
- Wide dynamic: 16, 24 or 32 bits, user selectable
- Streaming capabilities in cabled mode
- Versatile: towed and autonomous modes
- Easy to use: intuitive embedded web interface
- Available in 320mm, 550mm or 1210mm



SYLENCE

LOW-POWER ACOUSTIC RECORDER

- Equipped with a single hydrophone sensor
- Broadband: from 3 Hz to 256 kHz
- Low power recording system (600 Mw)
- Software selectable gain: 0 or 15 dB
- Records up to 180 days of data with only 15 D Cell batteries
- Easy to use: intuitive embedded web interface



APPLICATIONS

- Noise impact studies
- Ambient noise recording
- Cetacean research
- Environmental monitoring
- Mechanical failure detection
- Long-term surveys
- Subsea mining
- Geoacoustic studies





RUBHY

ACOUSTIC BUOY

- Real-time underwater noise monitoring
- Up to 4 hydrophones inputs
- Broadband: 3 Hz up to 625 kHz acquisition
- Radio link: over 10 km
- Wi-Fi link: 700 m
- GPS
- Stabilized float 1.25m diameter
- User-friendly intuitive embedded web interface
- Multiparameter buoy: temperature, pressure, conductivity, O₂, pH, turbidity, salinity...



REMHY

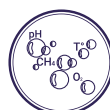
ACOUSTIC BUOY

- Real-time underwater noise monitoring
- Up to 4 hydrophones inputs
- Broadband: 3 Hz up to 625 kHz acquisition
- Wi-Fi link: 700 m
- GPS
- User-friendly intuitive embedded web interface
- Multiparameter buoy: temperature, pressure, conductivity, O₂, pH, turbidity, salinity...



APPLICATIONS

- Real-time noise monitoring
- Cetacean research
- Environmental monitoring
- Harbour & coastal work monitoring
- Drilling
- Pile driving
- Offshore works surveillance
- Dredging monitoring



SYSENSE

ALL IN ONE SOLUTION

- Customizable: large range of sensors available
- Easy to use: all data gathered in one logger
- Real-time monitoring from the control station in mainland
- Versatile: autonomous or cabled
- Compact: can be manipulated by two divers
- SEL & SPL acoustic data accessible from the web interface



COSTOF2

6000M COMMUNICATION & STORAGE FRONT-END

- Multisensor datalogger: up to 12 sensors
- Supported sensors: sensors with Ethernet, RS232/485/422 or 1-wire interface
- Multifunction capability: wired and autonomous modes
- Easy to use: intuitive embedded web interface



APPLICATIONS

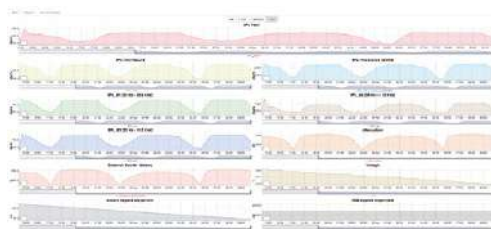
- Multiparameter real-time access
- Multidisciplinary monitoring
- Offshore and coastal works surveillance



RESONANCE

WEB PLATFORM

RESONANCE is a cloud application displaying real-time chemico-physical and acoustic data from one or several buoys transmitting data using Ethernet, 4G or Iridium. Alerts can be set when chosen thresholds are exceeded and remote control allows to change parameters from the user interface. Charts and reports also help to analyze assessments and monitor as many places around the globe as needed.



Acoustic data



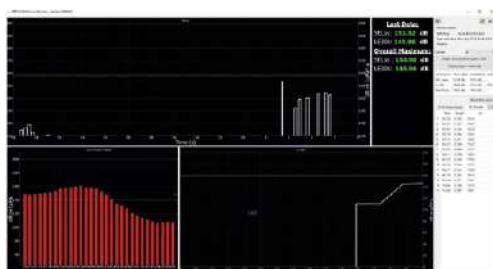
Multi data

RT LIVE MONITOR

REAL-TIME MONITORING OF CONSTRUCTION WORKS

RT Live Monitor allows a real-time noise production monitoring of offshore & coastal construction, in order to check compliance to local regulation.

Receiving pre-processed acoustic data from RTsys device via UHF, WIFI or through Ethernet cable, the software offers different display windows to monitor various standard sound level calculations and alerts via a colour system allowing a non-acoustician user to interpret the results in a few seconds.



AUV RANGE







NEMOSENS

VERSATILE MICRO AUTONOMOUS UNDERWATER VEHICLE



NEMOSENS is a compact autonomous underwater vehicle designed for scientific, industrial and defense applications. Lightweight and modular, its open LINUX architecture allows users to develop their own navigation algorithm for greater flexibility and maximal use.

ADVANTAGES

- Cost-effective
- Open Linux Architecture
- Small and lightweight

PAYLOADS & OPTIONS

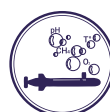
- Side scan sonar
- CTD
- O², T°, turbidity, hydrocarbon sensors, Multiparameter sensors
- DVL, Magnetometer, HD video camera, Sparse-LBL

CHARACTERISTICS

- Length: 895 mm
- Diameter: 124 mm
- Weight: <9kg
- Depth: 300 m
- Speed: 2 to 8 kts
- Endurance: up to 10 hours
- Positioning: GPS + INS

APPLICATIONS

- Marine biology
- Harbor & offshore surveillance
- Seabed mapping
- Sonar imagery
- Rapid environmental assessment
- Coastal water quality monitoring





COMET 300

MAN PORTABLE AUTONOMOUS UNDERWATER VEHICLE



COMET 300 is a two-man portable AUV designed to cover large underwater areas in a limited time and with high accuracy by offering precise real-time tracking and positioning as well as high definition sonar imaging capability.

ADVANTAGES

- Operates in turbulent waters
- Tracks and surveys wide zones in swarm mode
- Programmable mission on laptop
- Two-man portable: easy to launch and recover from a small boat
- Re-deployment turnaround time of 1 hour

CHARACTERISTICS

- Immersion: 300m
- Endurance: up to 20 hours
- Length: 1.77 to 2.50 m
- Weight: 27 to 40 kg
- Max speed: 10 knots
- Positioning: SPARSE LBL + GPS + INS + DVL

PAYLOADS & OPTIONS

- Sparse LBL
- Side Scan Sonar (opt. for bathymetry)
- Magnetometer
- CTD
- HD TV camera and light
- Multiparameter probes

APPLICATIONS

- Marine biology
- Harbor & offshore surveillance
- Seabed mapping
- Sonar imagery
- Rapid environmental assessment
- Coastal water quality monitoring



ASW RANGE







SEMA

PORTABLE AND RECOVERABLE ASW TRAINING TARGET



SEMA is a recoverable autonomous acoustic target dedicated to ASW training. It is operable from all kinds of platforms such as surface ships, submarines, helicopters and ASW aircraft. Different types of training modes such as passive, active and combined acoustics can be programmed. **SEMA** is easy to operate and recover, and is reconfigurable in one hour with a spare battery.

ADVANTAGES

- Modern sonar & torpedo compatibility (LFAS, VDS, HMS, ADS)
- Echo Repeater / Noisemaker
- Real fight training scenario
- Easy to deploy, recover and maintain
- Reconfigurable in one hour

CHARACTERISTICS

- Acoustic echo-repeater (1 to 33 kHz)
- 2 broadbands: 450 Hz to 8 kHz and 10 to 23 kHz
- 6 narrowbands: 200 Hz to 38 kHz
- Size: L 2.13 x Ø 0.15 m - H max 0.28 m
- Weight: 33 kg
- Power: 2500 Wh. Rechargeable
- Operating depth: from 3 to 300m
- Speed: 4 to 15 knots
- Autonomy: 10 hours at 4 knots (1.5 hour at 15 knots)

APPLICATIONS

- Sonar operator training
- ASW training
- Torpedo training







SIERA

SONAR MEASUREMENT SYSTEM

SIERA offers a solution for the characterization and performances check of underwater acoustic systems (hull-mounted sonars, dipping sonars, variable depth sonars, buoys...).

- Reception sensibility: sea state 0 up to 180 dB re μPa
- Emission level: 185 dB from 3 to 20 kHz / 160 to 185 dB from 500 Hz to 3 kHz / 170 dB from 20 kHz to 32 kHz
- Frequency band (E/R): 100 Hz to 32 kHz

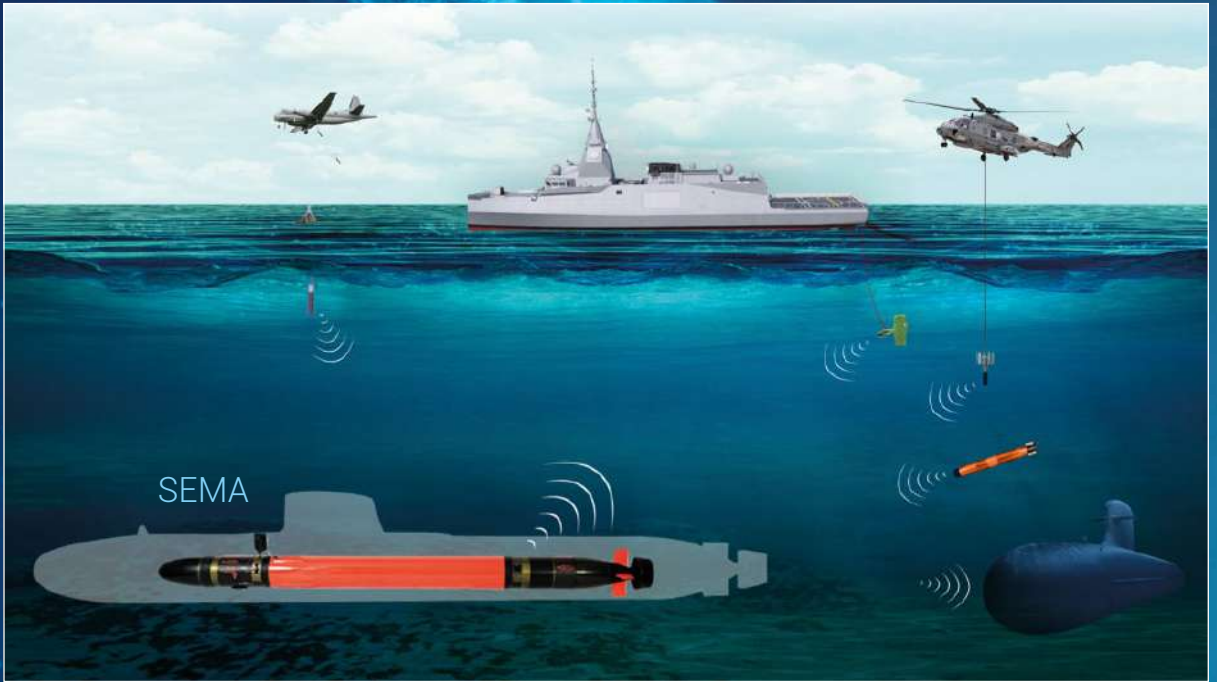
ADVANTAGES

- Lightweight and easy to implement
- Easily to measure and characterize the performance of a sonar system
- Real or delayed time

APPLICATIONS

- Sea acceptance tests
- Transmission levels measurement
- Real-time underwater communication
- Acoustic systems performances check & measurement





SEMA

RTSYS

ANTI-SUBMARINE WARFARE ECOSYSTEMS



SIERA

MCM RANGE







SONADIVE

SONAR & NAVIGATION SYSTEM FOR DIVERS



SONADIVE assists EOD divers during recognition or object detection missions. Divers can communicate all together and with the surface unit in real-time via an acoustic modem, sharing contacts and text messages within more than 2 km range, reaching up to 5 km using RTSys relay beacons. Sonar and navigation data are fully recorded allowing mission replay, data analysis and export. With 6 hours of battery life, the endurance can be extended by swapping batteries under water during mission.

CHARACTERISTICS

- BlueView 2D multi-beam sonar: 450 kHz or 900/2250 kHz
- HD TV camera and light
- Acoustic communication: 20 to 30 kHz Discrete mode
- Large screen: 12", visible in all water conditions
- Gradiometer: high performance fluxgate
- Navigation: GPS – INS – DVL – Pressure sensor
- Size: H 27 cm – W 37.2 cm – L 56 cm
- Weight: less than 20kg in air
- Neutral buoyancy
- Depth rating: 100m
- Autonomy: 6 hours

APPLICATIONS

- Sonar imagery
- Navigation in shallow water
- UXO detection
- MCM operations
- Amphibious and beaching operations





PRB

POSITIONING & RELAY BEACON

The **Positioning & Relay Beacon (PRB)** is a submersible beacon composed of a GPS, a transducer and a SDA14 Board. This beacon moored onto the seabed at specific locations allows two distinct functionalities:

- Doubling the communication range and clearing a shadow area
- LBL acoustic repositioning of mobiles operating units

In order to improve discretion and autonomy, the PRB can be remotely switched between active and passive modes.

SCM

SURFACE COMMUNICATION MODULE

The **Surface Communication Module (SCM)** is made of a waterproof suitcase with an integrated GPS and a SDA14 board linked to an underwater transducer. It allows the exchange of data and SMS between operating units, and to relocate itself thanks to the surface GPS.

A tablet linked to the SCM allows to display data and messages.

Positioning, immersion and route data are automatically transmitted between all operating systems.

The quality of reception is monitored and transmitted as well.





COMET-MCM

MAN PORTABLE AUTONOMOUS UNDERWATER VEHICLE



COMET-MCM is a 300 m operational AUV designed to meet the needs of detection, localization and classification of underwater mines on large areas in a limited time. **COMET-MCM** is able to navigate up to 20 hours with the most accurate positioning. This provides the operator precise information of the field data acquired during the mission through its integrated Side Scan Sonar and HD TV camera. **COMET-MCM** operates either alone, in a fleet (SWARM) or in combination with SonaDive handheld sonar giving a unique manned/unmanned range for MCM operations.

ADVANTAGES

- Operates in turbulent waters
- Tracks and surveys wide zones in swarm mode
- Programmable mission on laptop
- Two-man portable: easy to launch and recover from a small boat
- Re-deployment turnaround time of 1 hour

CHARACTERISTICS

- Immersion: 300m
- Endurance: up to 20 hours
- Length: 1.77 to 2.50m
- Weight: 27 to 40 kg
- Max speed: 10 knots
- Positioning: SPARSE LBL + GPS + INS + DVL

PAYLOADS & OPTIONS

- Sparse LBL
- Side Scan Sonar (opt. for bathymetry)
- Magnetometer
- CTD
- HD TV camera and light
- Multiparameter probes

APPLICATIONS

- Sonar imagery
- Navigation in shallow water
- UXO detection
- MCM operations
- Seabed warfare





NEMOSENS

VERSATILE MICRO AUTONOMOUS UNDERWATER VEHICLE



NEMOSENS is a micro AUV designed for interventions up to 300m depth, with a specific focus for missions in very shallow water (less than 5m water column). Using the same acoustic communication system as COMET, based on long baseline (LBL) positioning algorithms, **NEMOSENS** is able to navigate up to 10 hours with the most accurate position and localization in real time from the surface. Integrating a wide range of payloads, **NEMOSENS** is fully compatible with SonaDive and COMET-MCM either in standalone or in a fleet (SWARM).

ADVANTAGES

- Cost-effective
- Open Linux Architecture
- Small and lightweight

PAYLOADS & OPTIONS

- Side scan sonar
- CTD
- O², T°, turbidity, hydrocarbon sensors, Multiparameter sensors
- DVL, Magnetometer, HD video camera, Sparse-LBL

CHARACTERISTICS

- Length: 895 mm
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- Weight: <9kg
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- Speed: 2 to 8 kts
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APPLICATIONS

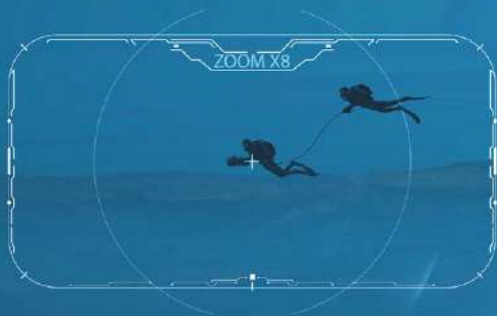
- MCM
- Special forces
- Preparation to amphibious operations
- ISR
- REA
- Beaching





RTSYS

AUTONOMOUS & MANNED SOLUTIONS

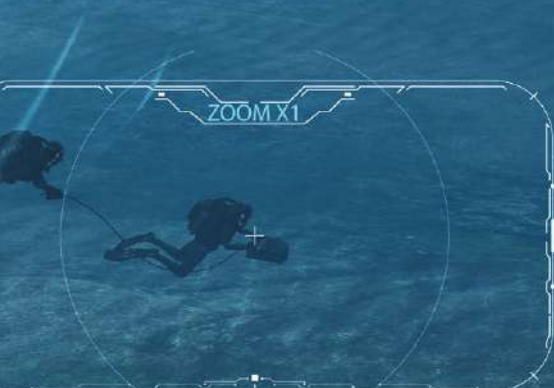


SONADIVE

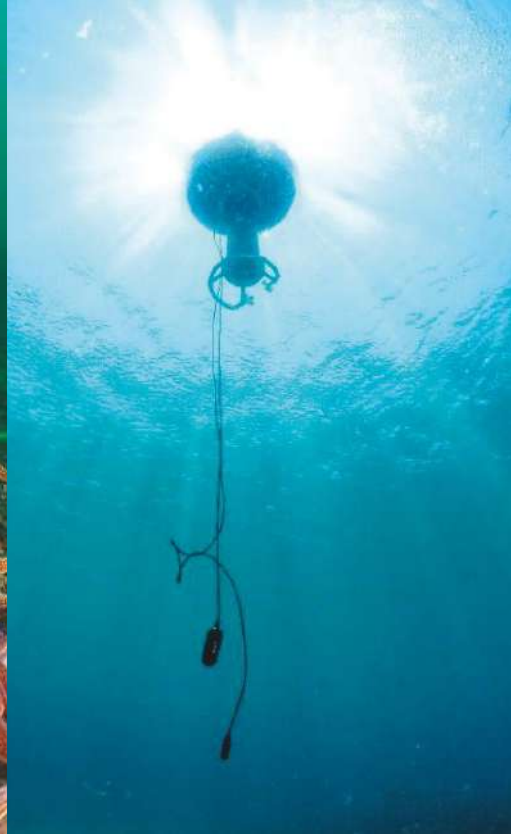




- > TACTICAL VIEW
- > REAL-TIME TRACKING UP TO 30 NODES
- > LIVE AND BI-DIRECTIONAL COMMUNICATION



SONADIVE



RTsys works with internationally recognized companies and consolidates its status of leader in terms of underwater acoustics monitoring.



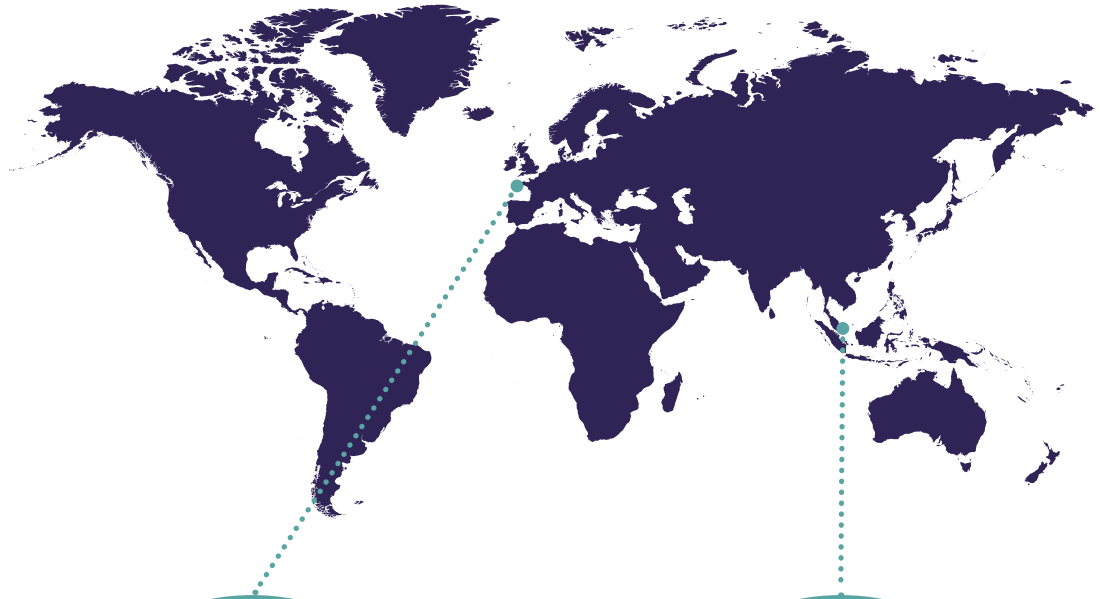


With more than 80 countries using our solutions worldwide, RTsys and its respective local partners assist and support every customer, from the pre-design process up to long term maintenance and after sales services.





WORLDWIDE FOOTPRINT



FRANCE HEADQUARTERS

ZA de Kerloïc
Rue Jean-Noël Jégo
56850 Caudan

+33 297 898 580
enquiries@rtsys.fr



ASIA-PACIFIC OFFICE

541 Orchard Road #09-01
Liat Towers
238881 Singapore

asia@rtsys.fr

[rtsys.eu](https://www.rtsys.eu)



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Erwan Amice, Georgina Kelly, Mer & Marine, Semantic TS, Creocan,
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RTSYS

ZA de Kerloïc, Rue Jean-Noël Jégo - 56850 Caudan - FRANCE
+33 (0)297 898 580 | enquiries@rtsys.fr