DEPARENTIS

MARITIME EXPERTISE

HYDROGRAPHY – GEOPHYSICS – GEOTECHNICS – GEOMATICS – ENVIRONMENT – PORTUARY

DEPARENTIS IS A COMPANY SPECIALIZED IN COASTAL HYDROGRAPHIC ACTIVITIES AND PORT SERVICES IN AFRICA.

WE ARE ALSO DEVELOPERS AND DISTRIBUTORS OF WEB APPLICATIONS FOR THE DIGITALIZATION OF YOUR BUSINESS: MANAGEMENT OF INFRASTRUCTURES AND PORT ACTIVITIES, CARTOGRAPHY, SURVEILLANCE AND AID TO NAVIGATION.

Africa is a giant of the seas. Bordered by the Mediterranean sea and two oceans, it weighs more than 10 million square kilometres of maritime territory, a treasure fragmented into 38 coastal states out of the 54 that make up the continent. Beyond of the natural resources it offers to the former, this access to the ocean is vital for all: it is the gateway to 90% of international trade.

Faced with the economic and environmental challenges that will sustain its development, the management of maritime waters in Africa is therefore a priority. In order to provide a regional response to your projects, Deparentis has set up in Dakar, Senegal.

Our strategy is to offer a competitive service, combining local skills with the international expertise of our network. **Our ambition** is to support our customers in a responsible way, by contributing to the development of our partners' know-how.

RAPHAËL PACOT
Chairman of Deparentis

PROVEN EXPERTISE
QUALIFIED STAFF
INNOVATIVE SOLUTIONS

Our activities in the fields of hydrography, geophysics, geotechnics, geomatics, the environment and port services have practical applications.
By providing comprehensive services, we support a wide variety of sectors such as construction, research or natural resource management.
We have genuine know-how in these areas. But we also have the ability to reinvent ourselves in order to adapt to your business, and to offer tailor-made services.

APPLICATIONS

CONSTRUCTION

- CIVIL & PORT ENGINEERING
- COASTAL PROTECTION
- DREDGING
- DAMS & RIVER INSTALLATIONS

PORTS & RIVERS

- PORT ASSET MANAGEMENT
- TRAFFIC MONITORING
- GEOFENCING
- VIRTUAL BUOYAGE

ENERGY & TELECOM

- SEALINES, CABLES & FIBER OPTICS
- INSTALLATION CORRIDOR
- MAPPING & NOTIFICATION
- CABLE PROTECTION

OIL & GAS

- **A DEMANDING INDUSTRY THAT DRIVES PERFORMANCE.** Deparentis is pleased to offer its services to the oil and gas sector in Africa, applying the highest standards in the industry, while providing local content.

25
hydrographers & specialists

20 years
of experience in Africa

Recognized know-how.

An international network of partners.

WE MAKE THE INVISIBLE VISIBLE

AND IT'S NOT MAGIC, IT'S A MISSION OF RESPONSIBILITY.

By entrusting us with your projects, you can rest assured. We comply with the most stringent regulatory requirements and technical standards, without ever compromising safety. At Deparentis, we understand that our measures count for you.

YOUR DATA DESERVED BETTER!

OUT OF THE WATER, WE MAKE YOUR INFORMATION STAND OUT.

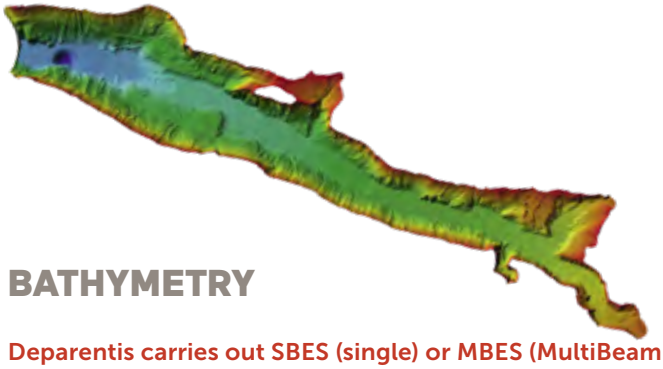
Over the past decade, we have become more aware of the value of information. For gathering it is not an end in itself. What are your measurements doing on a hard drive?
The challenge today is to make the most of it. There are web services and applications to digitise fieldwork and take it to a new level: archiving, collaborative cross-field use and interactive 3D representation.
Get ahead of the game. We can help you discover innovative solutions that will transform the way you work.

OUR STRENGTHS

LOCAL PLAYER READY FOR THE GAME.

We offer competitive costs, relying on both locally available resources and the expertise of our international partners. This flexibility and our experience in the region allow us to respond effectively to your needs, whatever the size or complexity of your project. And because we have a regional positioning, we are very attached to your satisfaction, that makes our reputation.

WE OFFER ALL SERVICES RELATED TO GEOPHYSICAL STUDIES AT SEA, IN RIVERS AND IN HARBOURS. THIS INCLUDES HYDROGRAPHIC MEASUREMENTS, BUT ALSO SMALL GEOTECHNICAL INVESTIGATIONS, PRECISION POSITIONING AND ENVIRONMENTAL OBSERVATIONS.



HYDROGRAPHY

HYDROGRAPHY n.f. **1.** The part of the physical geography that deals with marine or freshwater. **2.** All the flowing or stable waters of a country. **3.** Marine topography that deals with to lift the plane from the bottom of the seas and rivers.

BATHYMETRY

Deparentis carries out SBES (single) or MBES (MultiBeam Echo Sounder) bathymetric surveys, which are then processed for a wide variety of uses: feeding a dynamic model, creating a navigational chart, calculating volumes for dredging works... Our hydrographers are qualified category A and B. And to guarantee reliable and accurate data, we work in compliance with IHO (International Hydrographic Organization) recommendations.

SIDE SCAN SONAR

The information gathered by SSS (Side Scan Sonar) imagery is used to highlight the existence of debris on the seabed (wreckage, chains) or on the natural relief that may represent an obstacle to navigation or subsea facilities such as pipelines, cable routes, platform positioning and construction work.

COASTAL STUDY

On the coast, conditions are as varied as your projects. In difficult environments and inaccessible areas, it is sometimes necessary to combine the implementation of various solutions: jet-ski, UAVs, topography, LiDAR, etc. It is then essential to aggregate data of different planimetric and altimetric resolutions to produce a coherent DTM (Digital Terrain Model).
Deparentis is able to meet these challenges with professionalism.

MAGNETOMETRY

Detection targets submerged metallic scattered debris such as wreckage, anchors, chains, cables, pipelines and sometimes UXO (UneXploded Ordnance). The magnetometer can detect objects on the seabed, but can also detect objects completely buried in the sediment and invisible to sonar or visual inspection by diver.

GEOTECHNICS

GEOTECHNICAL n.f. **1.** Part of the geology that studies the properties of soils and rocks in relation to construction or marine engineering projects.

SUB-BOTTOM PROFILING

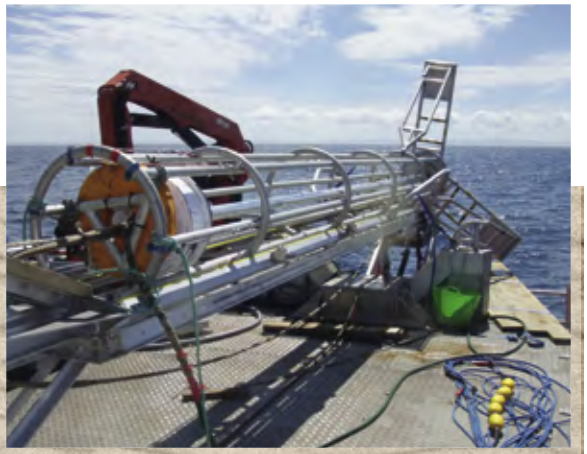
Beyond the mapping of the seabed revealed by bathymetry, marine geological profiling of the sublayers allows us to detect and map the interfaces between different sedimentary strata or the soft soil/rock interface. The penetration of the SBP (Sub-Bottom Profiler) signal is limited to a few meters into the ground, but allows us to achieve high resolution. This technique is regularly used, for example, in the search for sand deposits in beach nourishment works. It is also used to determine the burial conditions of a submarine pipe or cable in the natural environment.

SISMIC

Although the resolution is somewhat less fine, **seismic imaging is a method that surpasses sediment sounding measurements** in terms of penetration depth, allowing the visualization of geological structures beyond the first horizon. The results are then entrusted to the expertise of our geotechnicians who interpret the images. Seismic imaging is used, for instance, to determine deep seabed conditions. Similarly, it is used for dredging projects in undisturbed areas, where the hardness of the soil can size the equipment requirements and the cost of the work.

SMALL SCALE GEOTECHNICAL

To validate the electronic measurements collected by means of a sub-bottom profiler or seismic, we also carry out small, complementary and punctual geotechnical surveys, such as coring and sampling. In addition to stratigraphic interpretation, laboratory analyses can then provide specific information on soil composition.

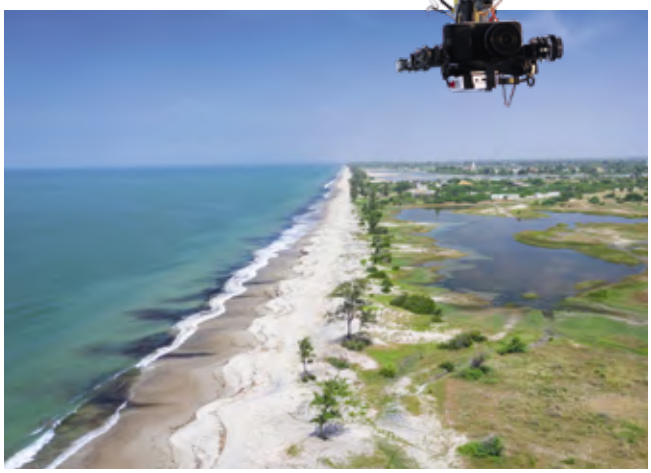


GEOMATICS

GEOMATIC n.f. **1.** Discipline bridging the gap between geography and computer science, Geomatics defines the practices and technologies that enable the collection, analysis and sharing of data.

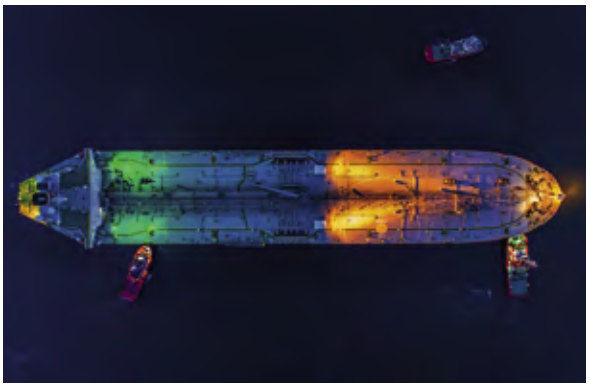
BATHYMETRIC MAPS

Our measurements are carried out in accordance with the recommendations of the International Hydrographic Organization (IHO) S-44 standard or better. Of course, special accuracy is required for critical navigational areas, such as rivers, canals and harbours, where under-keel clearance is essential for navigation.
In order to represent this data in the form of navigational charts, our hydrographers produce Electronic Navigation Charts (ENC) to S57 standards .



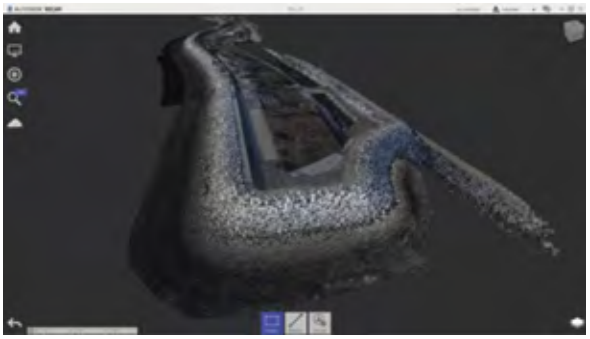
DRONE SURVEY

Topo-bathymetric surveying techniques –using remotely operated boats –USV (Unmanned Surface Vehicle) or drones – UAV (Unmanned Aerial Vehicle) for aerial mapping– **represent now proven solutions.** These means are particularly suited to respond safely and economically to the problems of congested bodies of water such as harbours, very shallow areas or where access conditions are dangerous.
In these circumstances, we are able to use drones to carry out bathymetric and LiDAR measurements, either directed or fully automated.



PRECISION POSITIONING

At sea, with no fixed landmarks, knowing your position at all times is vital. This precision is essential in all our activities, whether we are involved in navigation, operations on offshore platforms, pipelines or the deployment of Remotely Operated Vehicles (ROVs). In order to implement the most demanding solutions, Deparentis relies on experienced and qualified staff, certified by Bosiet & Huet.



LiDAR CARTOGRAPHY

The LiDAR *(Light Detection and Ranging)* **technology,** with its topographic and bathymetric applications, **enriches a GIS with altimetric information.**
It also complements traditional bathymetric data by simultaneously capturing the land and the seabed to provide a continuous and detailed 3D elevation model of the coastline. Deparentis offers its LiDAR mapping skills for your needs in hydrodynamic modelling, coastal mapping or coastal vulnerability analysis.

ENVIRONMENT

ENVIRONMENT n.m. **1.** Set of elements physical, chemical or biological, natural and man-made conditions that surround a human being, animal, plant or species.
◆ The infinite number of all the natural conditions that can be observed in a given area.

> **“ WE DO NOT MEASURE THE ENVIRONMENT, WE’RE TRYING TO UNDERSTAND IT. ”**

PHYSICAL OCEANOGRAPHY

Your projects may require observing the direction and amplitude of currents, swells and tidal fluctuations. These measurements are made using various instruments such as ADCP (Acoustic Doppler Current Profiler) or wave measuring buoys. Deparentis offers these instruments for sale or rental, while ensuring their implementation.

SAMPLE COLLECTION

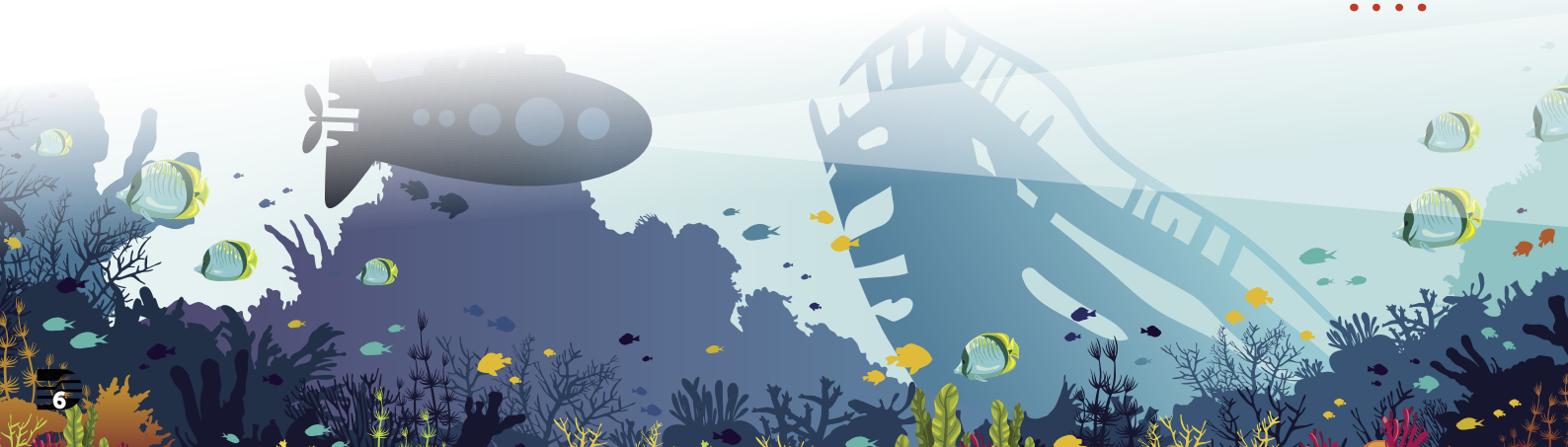
Soil or water samples can be taken for many purposes, for a one-off inventory or environmental monitoring over a long period, to characterize the nature of a soil, for toxicological measurements or for the observation of living organisms: flora, fauna, plankton. It is imperative to follow strict protocols for the collection, handling and storage of these samples. From the field to the laboratory, our technicians implement good practices to ensure the integrity of your results.

VIDEO OBSERVATION

For the observation of benthic stands, we can deploy directed or automated systems of underwater photography HD, video with surface recording and monitoring (CCTV), using static or towed surveillance cameras. Deparentis collaborates with specialists in marine biology, who ensure the identification and enumeration of species.

NOISE MEASUREMENT

The measurement of underwater noise by hydrophone makes it possible to take stock of the state of marine life, for example to map benthic populations or to detect the presence of marine mammals. These indicators make it possible to assess the possible environmental impact of a construction site or a seismic survey.



EXPERTISE

UNDERWATER METROLOGY

For 3D BIM *(Building Information Modeling)* **digitization,** we carry out centimeter precision surveys using underwater acoustic positioning systems or photogrammetry.
From quality control during the construction phase to inspection measurements after installation, Deparentis offers turnkey solutions tailored to the project requirements.

ROV SERVICES

More and more underwater tasks are entrusted to Remotely Operated Vehicles (ROVs) to replace divers, thus limiting the risks for humans and allowing deeper intervention. These robots controlled from the surface can be equipped with cameras, manipulators, sensors and other tools for specific construction and inspection tasks. The International Marine Contractors Association (IMCA) classifies ROVs into five different categories according to their capability. Deparentis is able to deploy ROVs of category 1 (observation) and category 2 (light payload).

UNDERWATER INSPECTION

In addition to metrology, the photogrammetric process also allows a visual colour representation that is easier to analyse, for example to create an overview of a structure or to assess localised damage. This technology is therefore particularly well suited to the inspection of port structures, quays, dams, rock embankments, PLEM (Pipeline End Manifold) gates or mooring chains.
Deparentis is a Comex representative. And with the Orus 3D sensor installed on ROV or manipulated by divers, we perform high precision 3D photogrammetric inspections **qualified by Bureau Veritas.**

WRECK DETECTION AND UXO

Magnetometer and gradiometer surveys are conducted to detect the presence of buried wreckage or UneXploded Ordnance (UXO). These investigations are carried out on potentially high-risk sites, prior to dredging work or the construction of new underwater infrastructure. This mission requires special expertise, for which we provide experienced and qualified personnel.

Deparentis also advises design offices and project developers. We can, for example, assist you in the definition of the corresponding specifications to best suit your project, in order to mobilize the most appropriate means and technologies, at the best price. We also place our expertise at your disposal to carry out **work supervision** or **training missions.**

SOFTWARE AS A SERVICE

Software as a Service (SaaS) is a commercial software operating model in which software is installed on remote servers rather than on the user's machine. Customers do not pay a license fee for a version, but freely use the service online or, more generally, pay a subscription fee.

By digitising your data in the cloud, you make the information more intelligible, more easily accessible for your collaborators, and you definitely gain in productivity. Confronted with ever-increasing volumes of information, this added value is also a key to better understanding and decision making.

We offer solutions to fulfill two types of needs: for **ports** and for **maritime security** and **aids to navigation.**

DEPARENTIS DISTRIBUTES WEB APPLICATIONS, WHICH ARE SERVICES ACCESSIBLE ONLINE AT ANY TIME AND FROM ANYWHERE, WITH A COMPUTER, A TABLET OR A SMARTPHONE. NO NEED TO INSTALL ANY SOFTWARE, AN INTERNET ACCESS IS ENOUGH TO ACCESS YOUR DATA WHICH ARE HOSTED ON THE CLOUD. EASY TO HANDLE, THESE WEB APPLICATIONS OFFER A MODERN AND USER-FRIENDLY ERGONOMY, WHICH ALLOWS TO DEPLOY THEM QUICKLY AND AT A LOW COST. A ONE DAY TRAINING IS GENERALLY SUFFICIENT, AND IF NEEDED OUR TECHNICAL SUPPORT IS AVAILABLE 7/7 DAYS.

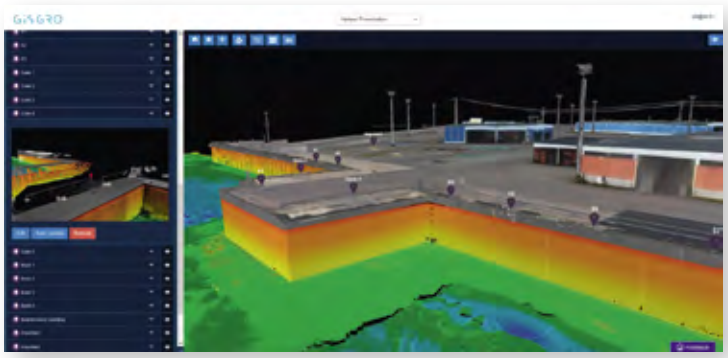
PORTS

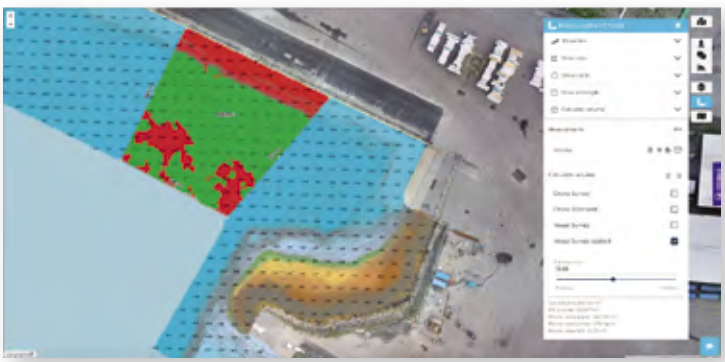
GISGRO

ASSET MANAGEMENT

The challenge is that the information you need lies on different platforms. The architect has the drawings that are archived somewhere in paper format. The hydrographer has point clouds on a flash drive in a drawer, but no one has been able to open it. The decision-makers have never seen the damage the engineer is trying to repair with the contingency budget...
Learn how to make the most of abundant and varied information: Gisgro allows you to archive, visualize, share and exploit data and 3D surveys of infrastructures. By centralizing digital information, Gisgro makes it more easily accessible to administrators, operations managers and technical services.
This tool makes it possible to better plan your interventions and reduce the maintenance costs of your structures by 15 to 20%.

With Gisgro, enter the digital era to gain in competitiveness.





PORTS

PORT OPERATION AND CHARTING: GEOMOD PORTALL

With its modular architecture, PortAll is a set of applications that allows hydrographers, harbour masters and pilots to benefit from functionalities specific to their activity, while sharing the same updated data.
For hydrographic services, the Ulhysses module automatically transforms and updates bathymetric surveys into accurate and reliable standardized digital charts (bENC).
With the ePilotBook module, marine pilots have an application designed for them. It provides the latest environmental information, as well as real-time data such as AIS, winds, water levels, dock clutter, service vehicle positions, etc. The ePilotBook module also provides the most up-to-date environmental information. With PortAll, you get professional, tailor-made solutions.

MARITIME SAFETY AND AIDS TO NAVIGATION

WATCH OVER YOUR INSTALLATIONS: ULTRAMAP ASSET MONITOR

Developed by Ultramap, Asset Monitor allows, thanks to the monitoring of Automatic Identification System (AIS) information of maritime traffic, to record and alert vessel movements, for example anchoring or fishing actions in prohibited areas. Asset Monitor is a tireless watchman that monitors 24/24h in a fully automated way your power cables, telecommunication cables, oil and gas pipelines, structures afloat or underwater.

EMULATION OF VIRTUAL BUOYS: VESPER MARINE GUARDIAN

When physical buoys are expensive or impossible to deploy Guardian: Mark is the solution. This service allows you to make hazards at sea visible or mark areas by creating virtual buoys with just a few clicks.

By combining a shore-based AIS station with cloud-based software, Guardian: Mark leverages Vesper Marine's technology to enable organizations in the oil and gas, energy, fisheries, marine works and port sectors to enhance the safety of their personnel and assets.

YOUR SATISFACTION
IS OUR REPUTATION

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