

# UNDERWATER INSPECTION AND MONITORING SOLUTIONS

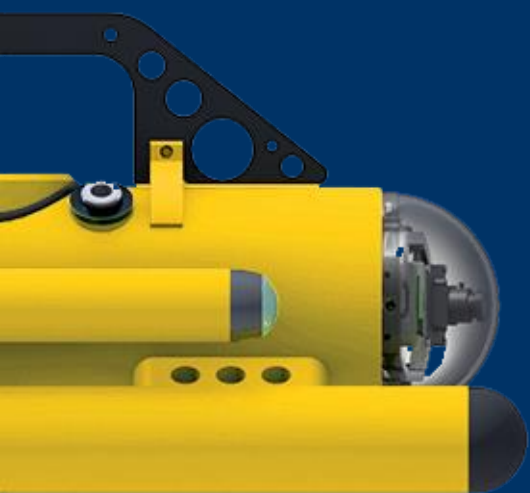


**SUBSEA TECH**

Marine and Underwater Technologies

# PRESENTATION

**Subsea Tech** is an engineering company based in Marseille and specializing in design and manufacture of inspection and monitoring systems for marine and underwater environment.



## OUR ACTIVITIES



Design and  
fabrication



Distribution



Services



Bespoke  
solutions

## KEY FIGURES

**2005**

Creation

**23**

Staff (15  
engineers)

**2,3M**

Turnover in €  
(2016)

**20%**

Turnover  
growth  
during the  
last 3 years

**450**

m<sup>2</sup> facilities  
with 30m pier



# ACTIVITY – DESIGN AND FABRICATION

## Mini-ROVs



### 150m depth rated : Guardian, Observer

- On batteries or main power
- 2 or 4 horizontal thrusters
- Front/Rear video cameras (pan & tilt)
- Ultraportable : < 7kg

### 500m depth rated : Tortuga

- 4 azimuthal thrusters
- Current up to 5 knots
- Weight < 40kg
- Thrust/Weight ratio : 1,8
- Up to 1000m tether length

## USVs



### Catarob (inland waters)

- 1,8 m – 50 kg
- Payload : 15 kg
- Autonomy 4h – Range 1km

### CAT-Surveyor (harbours/littoral)

- 3m – 270 kg
- Payload : 80 kg
- Autonomy 12h – Range 5km

### SeaCAT (offshore)

- 5,8m – 1200 kg
- Payload 200 kg
- Autonomy 72h – Range 10km

## Underwater video systems



- Highly compact
- **Acetal** or **stainless steel** casing
- Depth rating **100m** and **300m**

### UVS100RL/300RL (video only)

- 1 or 2 video camera stream

### UVAS100RL (video + diver comm.)

- 2 simultaneous stream

### TUVS100RL

- Towed video camera (1 stream)



# ACTIVITY - DISTRIBUTION



2G Robotics  
3D laser scanners



Kongsberg  
Video cameras and Pan & Tilt



BluePrint Subsea  
Sonars and USBL



LYYN  
Video enhancement



Buckleys (UVRAL) Ltd.  
CP probes



Seabed  
Bathymetry echosounders



Cygnus Instruments  
Thickness measurement  
gauges



Teledyne BlueView  
Multibeam imaging sonars

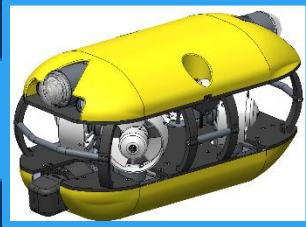






# ACTIVITY – BESPOKE SOLUTIONS

## R&D PROJECTS



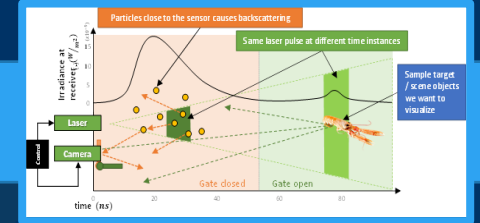
**TORTUGA:** inspection class ROV (depth rating 500m)



**SEACAT :** USV for offshore inspections with ROV and coastal survey

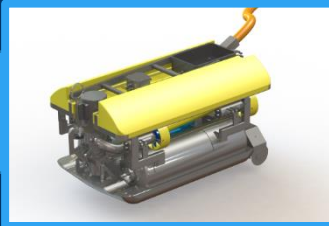


**Docking Station**  
AUV docking system  
(Defence project)



**UTOFIA** (Underwater Time of Flight Image Acquisition)  
EU project

## SPECIAL PROJECTS



**ROV AREVA:** Pumping ROV for radioactive sediments recovery



**POWER-C:** High voltage underwater connector for marine renewables



**TORPEDO:** AUV for long range pipe inspection (over 5000m)



**ROBIS:** ROV for ship ballast tank inspections



# ACTIVITY - SERVICES

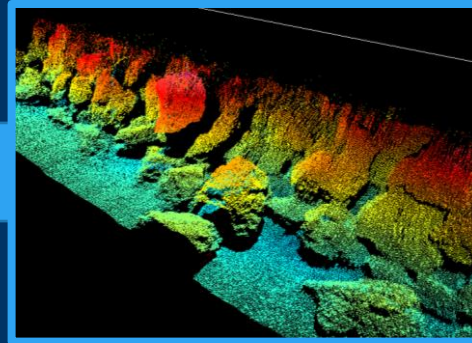
**Dam and power plant inspection**



**Pipe and confined area inspection**



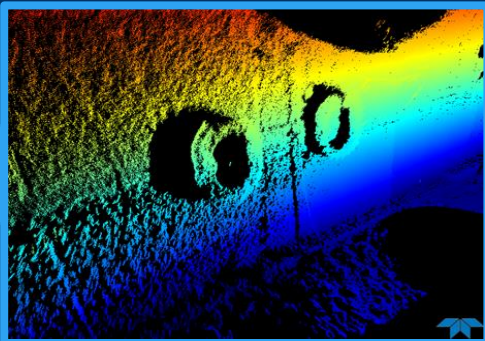
**Dikes, piers and canals inspection**



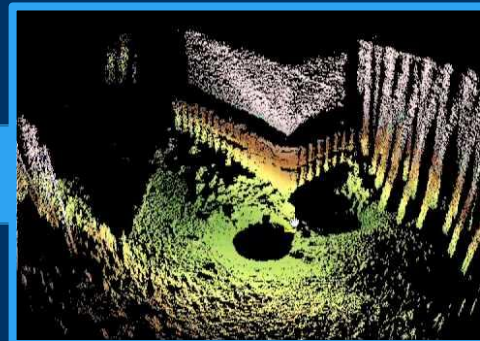
**Civil infrastructures inspection (bridges, etc.)**



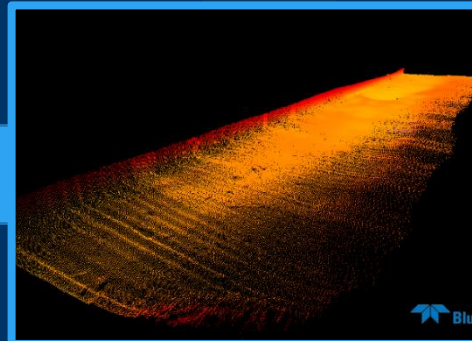
**Harbour infrastructures inspection**



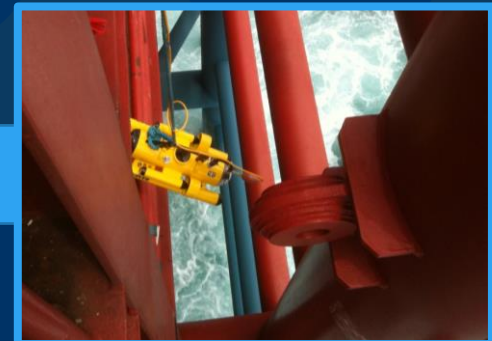
**Underwater infrastructure 3D modelling**



**Bathymetric survey and seabed mapping**



**Offshore infrastructures inspection (FPSO, etc.)**



# RESSOURCES



## EQUIPMENT

Mini-ROVs (Remotely Operated Vehicle)  
USVs (Unmanned Surface Vehicle)  
US gauges (thickness measurement)  
CP probes (cathodic protection potential measurement)  
Imaging sonars  
Profiling sonars  
3D Lasers



## ASSETS

Video control truck  
Semi-rigid boat  
Power generator



## TEAM

Operation Engineer  
ROV pilots / technicians  
Hydrographer  
Designers





# APPLICATIONS – INFRASTRUCTURES



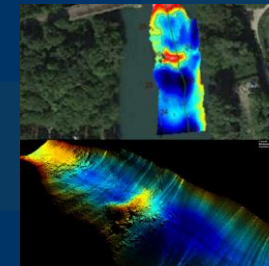
- Video and sonar inspection
- Acoustic and laser 3D modelling
- Thickness measurement
- Cathodic protection measurement
- Defects scaling
- Bathymetry



**Underwater civil work**  
(Dams, dikes, piers, bridge footers, canals)



**Confined areas**  
(Tanks, pipes and sewers, flooded galleries, ship water ballasts)



**Bathymetry survey**  
(Reservoirs, harbour areas, channels, coastal areas, waterways)





# APPLICATIONS – OFFHSORE / MARINE ENERGY

- Video and sonar inspection
- Acoustic and laser 3D modelling
- Thickness and CP measurement, defects scaling
- Asset monitoring and maintenance
- Bathymetry



**Offshore infrastructures**  
(Platforms, wind farms, buoys, risers, J-tubes, moorings, anodes)



**FPSO and Workboats**  
(Hulls, thrusters, ballast tanks, thickness measurement, CP measurement)



**Pipelines and cables**  
(Oil&Gas pipelines, telecom cables, wind farm power cables, footers, welds, anodes)



# APPLICATIONS – DEFENSE / SECURITY



- Video and sonar inspection
- Acoustic positioning
- Mission mapping
- Target detection
- Operation planning and monitoring



**Surveillance of critical infrastructures**  
(SEVESO sites, harbours, oil&gas terminals)



**Diver supervision and support**  
(Countermining, special forces, rescue teams, training)



**Law enforcement**  
(Drowned bodies, forensic and evidence, mines and other targets)



**Ship hulls**  
(Struggle against narcotics and other illegal traffics, explosive/mine detection)



**Search and rescue**  
(Mission planning, target detection, diver operation monitoring)



**Surveillance of swimming areas**  
(Detection of intrusions : sharks, etc., drowning situation detection, lifeguard operation monitoring)



# APPLICATIONS – MARINE SCIENCES / RESEARCH



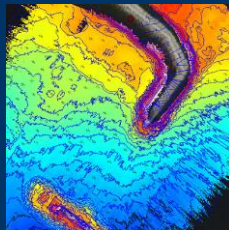
- Video inspection
- Underwater mapping
- Acoustic and laser 3D modelling
- Water and sediment sampling
- Mission planning
- Physico-chemical parameters monitoring



**Observation of underwater ecosystems**  
(Fauna/flora, sampling, behavioural studies)



**Environmental monitoring**  
(Ecosystems, water quality, benthology, pollution monitoring, physico-chemical parameters)



**Hydrography**  
(Waterways, harbours, coastal areas, dams and reservoirs, channels)



**Underwater archaeology**  
(Wrecks, archaeological sites, confined areas, sensitive areas)





# APPLICATIONS - AQUACULTURE



- Video inspection
- Thickness measurement and defect scaling
- Full-time acoustic surveillance
- Breeding area protection thanks to smart nets



**Nets, buoys and moorings**  
(Hole detection, mooring chain control, fouling thickness control)



**Dead fishes recovery**  
(Accumulation area detection, collection with mii-ROVs)



**Detection of dangerous species intrusion**  
(Sea lions, sharks, poachers, etc. automatic species identification, automatic localization of the intrusion, alarm triggering)



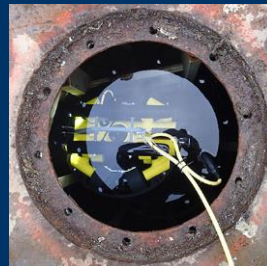
# APPLICATIONS – SHIPS AND HARBOURS



- Video and sonar inspection
- Acoustic and laser 3D modelling
- Thickness and CP measurement, defects scaling
- Bathymetry



**Hulls and thrusters**  
(Inspection and measurements for maintenance scheduling, commercial ships, yachting)



**Ballast tank inspection**  
(Inspection and measurements for maintenance scheduling, defects mapping)



**Supervision of wreck raising**  
(Wreck positioning, wreck configuration, lifting point localization, operation monitoring)





# APPLICATIONS – NUCLEAR



- Video and sonar inspection
- Target detection
- Sediment pumping



**Cooling loops inspection**  
(Water intake, main feeders, cooling pools, drainage and outlets)



**Inspection/cleaning of radioactive waste storage tanks**  
(Tank inspection in low visibility conditions, mud decompacting, sediment pumping)





# OUR ADDED VALUE



Cost saving



Flexibility



Safety



Time saving



Pushing operational limits

## Expertise

Subsea Tech team mainly hires staff with strong operational background in the offshore and underwater works sectors. The deep expertise and knowledge of the operational constraints brings us to design and manufacture products perfectly matching with the field operator's requirements. We are the first users of our products

## Innovation

Thanks to its Project Department, Subsea Tech benefits from a strong innovation capacity in order to offer to our clients the required flexibility in the design of their projects. We do adapt to your technical specifications.

## Availability

Our team is committed to bring the best quality products and services to our clients as well as an optimal reactivity regarding sales and technical support. Subsea Tech is certified ISO 9001 – 2008 since 2013, and ISO 9001-2015 since 2017.



# MAIN REFERENCES



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