

# MARINE SURVEY

HYDROGRAPHY & GEOPHYSICS SERVICES



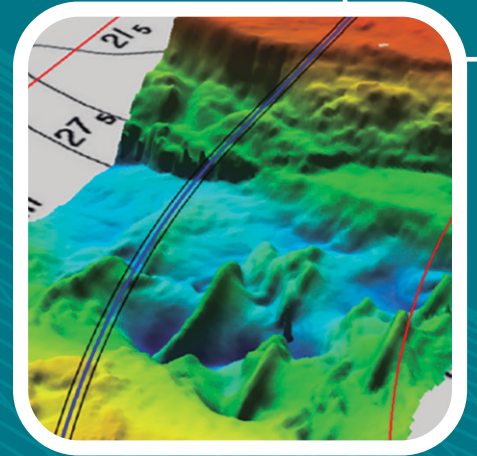
**BELOV**

**Belov Group** has been accredited by the *Brazilian Navy Hydrographic Center* since 2002. With vast experience in maritime and river surveys, the company operates in Brazil and internationally.



## BATHYMETRY

- Dredging Monitoring and Inspection
- Alteration of Operational Parameters
- Updating of Nautical Charts and Documents
- Mapping of Submerged Structures
- Reservoirs and Dams  
(Updating of Stage-Area-Volume Curves)
- Nautical Signaling Projects



## WATER LEVEL MEASUREMENT

- Installation and Reoccupation
- Short-term and Long-term Monitoring
- Real-time Data Transmission



## METEO-OCEANOGRAPHIC DATA ACQUISITION

- Current Measurement
- Wave Monitoring
- Physical and Chemical Seawater Parameters
- Meteorological Data



## MARINE SURVEY

- Jet-Probe
- SPT, Mixed, and Rotary Drilling
- Vibrocoring (Environmental)



## GPR - GROUND PROFILING RADAR

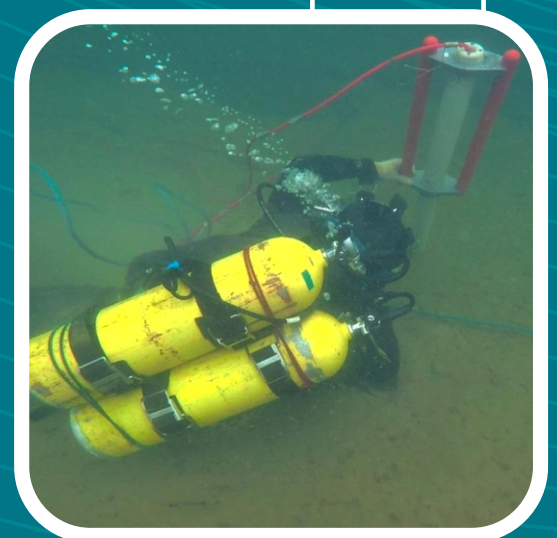


- Underground Interferences Localization
- Crossing Inspection



## PIPE LOCATOR

- Metal Pipeline Locating
- Crossing Inspection (Banks and Riverbeds)



## SURFACE GEOPHYSICAL SURVEY (SIDE SCAN SONAR)

- **Seafloor Surface Facies Identification (Sediment Types, Rock Outcrops)**
  - Identification of Deposits for Mineral Exploration and Beach Nourishment
- **Structural Conservation Analysis (Jetties, Bridges, Piers)**
  - Target Detection
  - Pre-Dredging Studies (Rock Outcrops, Debris Mapping)
- **Environmental Studies (*Habitat* Mapping)**



## SUBSURFACE GEOPHYSICAL MAPPING

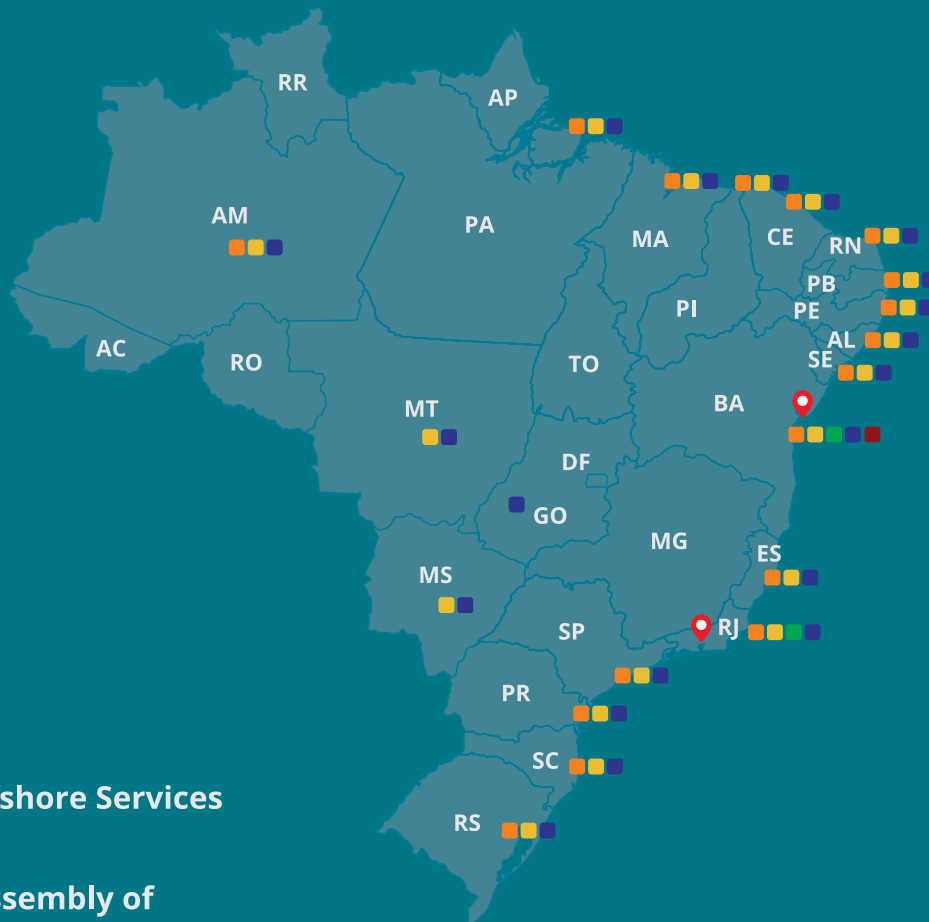
- **Chirp, Boomer and Sparker Sources**
- **Overburden Thickness Determination**
- **Pipeline Tracking**
- **Determination of Bedrock Depth**
- **Sedimentary Layer Geometry Determination**
- **Geohazard Analysis (Presence of Shallow Gas in Sediments)**
- **Volume Calculation of Deposits (Mining and Beach Nourishment)**



Since 1981, **Belov Group** has been operating with solidity and professionalism, serving its demanding market with excellence.








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 **Service hubs**

Belov in Brazil:

-  **Port Works**
-  **Belov Shipyard**
-  **Underwater and Offshore Services**
-  **Marine Survey**
-  **Manufacture and Assembly of Heavy Structures for Constructions**



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