MARINE SURVEY

HYDROGRAPHY & GEOPHYSICS SERVICES



BELOV

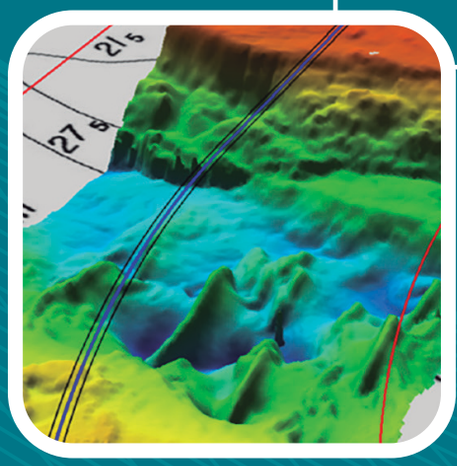
45 ANOS

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
- Vibracoring (Environmental)





DRONE & LiDAR

- Mapping of Shore Approach, Onshore Pipeline Areas, Terminals, and Surface Interferences
- Survey of Riverbanks, River Terminals, Flood Areas, and Integration with Hydrographic Monitoring Programs
- Erosion Monitoring, Coastal Protection Works, and Integration between Topography and Bathymetry

PIPE LOCATOR & GPR

- Subsurface Utility Mapping
- Buried Pipeline Locating and Tracking
- Pipeline Corridor Inspection
- Onshore Port and Maritime Applications
- Near-Surface Geophysical Investigation



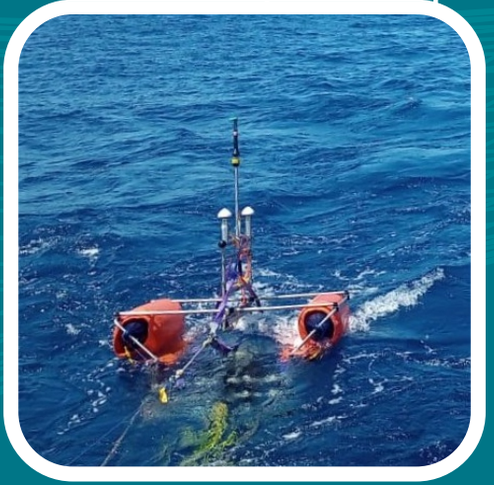
SURFACE GEOPHYSICAL SURVEY (SIDE SCAN SONAR)



- 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)

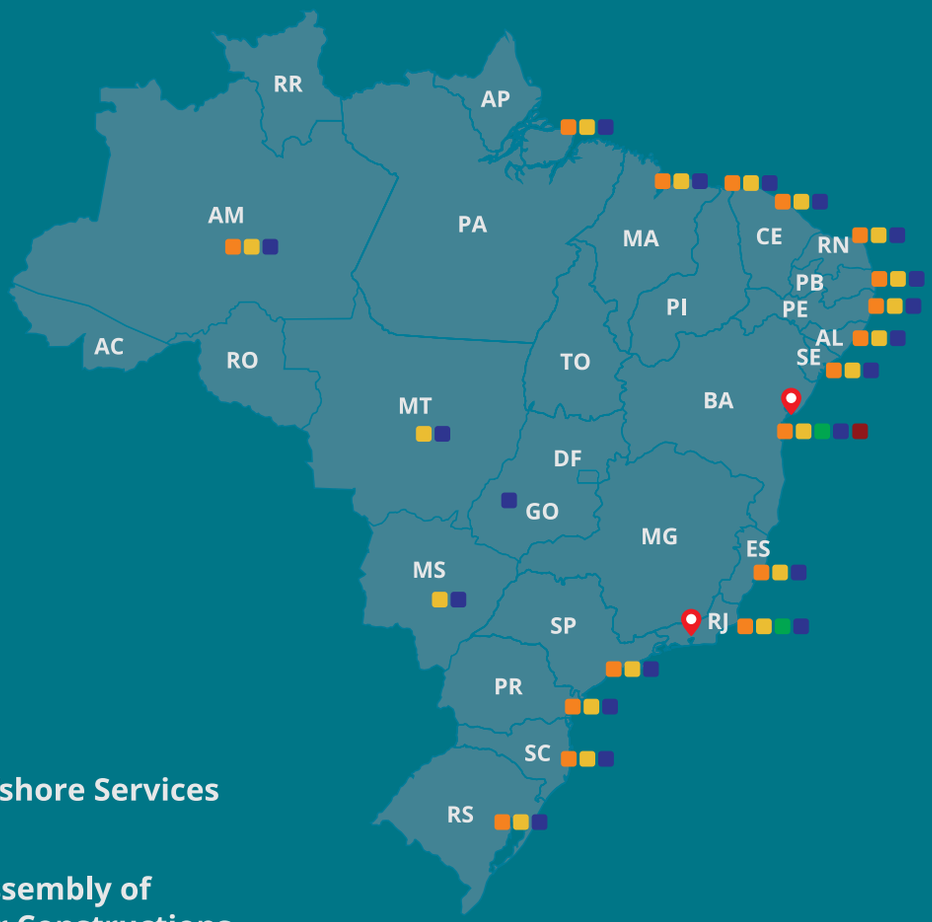
SUBSURFACE GEOPHYSICAL MAPPING

- 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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