OFFSHORE ENGINEERING & GEOLOGICAL SURVEYS
**LIFE SPAN**

**Exploration & Assessment**
- Surveys and reconnaissance of the location for Rig positioning
- Navigational support during Rig positioning
- Navigational support during seismic surveys

**Field Infrastructure Development**
- Surveys and inspection of locations for Offshore Facilities Installations
- Surveys and inspections along pipeline and cable routes
- As-built survey upon completion of construction
- Navigational support on installation and lay operations
- Navigational support during Rig positioning

**Production**
- Routine surveys of pipelines, platforms and subsea infrastructure elements
- Integrated surveys prior to repairs, overhauls and upgrades
- Repairs operations support

** Decommissioning**
- Integrated surveys prior to decommissioning and lifting operations
- Decommissioning operations support
- Final surveys upon completion of operations
SCOPE OF SERVICES

- Integrated engineering and geological surveys
- Pre-lay survey of the routes of installation of subsea pipelines / cable lines, post-lay survey of the such and monitoring during construction and operation thereof
- Sites survey prior to transportation /positioning of offshore floating drilling and fixed platforms
- Navigational support of subsea operations with acoustig positioning systems (USBL)
- Navigational support of positioning of offshore floating drilling rigs on drilling sites
SCOPE OF SERVICES

- Navigational support during tow and positioning of offshore structures;
- Navigational and hydrographic support of pipelay and cablelay barges, subea pipe and cable trenchers;
- Navigational and hydrographic support and monitoring of dredging operations;
- Various types of post construction surveys (as-built surveys) including burial, depth surveys for pipeline, cable lines and other facilities.
TYPES OF SURVEYS

- Bathymetric surveys using multi-beam or single-beam echo sounder
- Side scan sonar surveys of the sea bottom
- Magnetometer surveys
- Seismoacoustic profiling
- Taking samples of different designations
- Drilling operations using submersible units without well casing
- Cone penetration testing
- Field and lab analysis
- Office processing of engineering survey data.
LIST OF EQUIPMENT

The Company operates own fleet of high tech hydrographic and geophysical equipment:

- **Multibeam Echosounder**: R2Sonic 2022 & Valeport sound velocity and sea level meters
- **Motion Sensors**: SMC IMU-108-30 & Teledyne TSS DMS-05
- **Side Scan Sonar**: SeaKing Titech 325/675 kHz
- **Magnetometer**: Geometrix G-882-SX
- **Sub-bottom profiler**: EdgeTech 3100
- **Hydroacoustic position reference system**: SONARDYNE Mini-Ranger 2
- **GPS-receivers**: C-NAV 3050 GNSS & Trimble SPS 461
Coring and drilling of engineering well depending on requirements of each specific project can be performed using electric vibrocorer SVC500E or hydraulic submersible drilling rig UMB-130 or UMB-130M.

**UMB-130M**
- Max. water depth: 60 m
- Coring depth per run: up to 6 m
- Multi run drilling depth: up to 50 m
- Core diameter: 94 & 130 mm
- Operations can be performed from an unspecialized vessel

**SVC 500E**
- Max. water depth: 50 m.
- Coring depth per run: up to 5 m.
- Core diameter: 70 & 108 mm
- Operations can be performed from an unspecialized vessel
SUBSEA SURVEYS

- Sites survey for positioning of offshore floating drilling and fixed platforms
- Survey of wellheads of abandoned offshore wells
- Surveys of subsea parts of offshore structures (visual survey and wall thickness gauging);
- Surveys of subsea pipelines;
- Surveys of cathodic protection of subsea pipeline and offshore structures.
Visual surveys, thickness measurement and cathodic protection potentials metering are performed using remotely operated subsea vehicles (ROV) of inspection class operation at depths up to 300 m.
If necessary, operations could be performed from either Client vessel, or from specialized vessel “Surveyor” operated by Trident.

**SPECIFICATIONS:**
- Class: Russian Maritime Shipping Register
- Flag: Russian Federation
- Length: 44,80 m
- Breadth: 9,10 m
- Max. Draught: 2,30 m
- Power Plant: GM Detroit 12V 149
- Total Power: 1208 kWt
- Endurance: 21 days
- Thrusters: Bow – 112 kWt, Stern – 274 kWt
- Positioning System: 4-point anchor positioning system
- Bow and Stern winches with bollard pull of 4 tons, 30 m/min
- Main deck area: 145 sq.mtrs
- Deck Equipment: Deck Crane SWL 5 t;
# COMPLETED PROJECTS

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<tr>
<th>Project</th>
<th>Client</th>
<th>Year</th>
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<td>Navigational support of transportation and positioning on a drilling site of a support structure of a well head platform at V. Filanovskiy field in the Caspian Sea.</td>
<td>Lukoil NVN</td>
<td>2018</td>
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<td>Survey of the tow route and area of installation of the support structure of the well head platform at the V. Filanovskiy Field in the Caspian Sea.</td>
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<td>Subsea surveys, navigational and hydrographic support of cable lay operations at V. Filanovsky field in the Caspian Sea</td>
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<td>Navigational and Geodesic support during installation of the LAM-E platform support structure in the Caspian Sea.</td>
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<tr>
<td>Survey of location assigned for installation of LAM-E support structure in the Caspian Sea.</td>
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