

# Pipeline Transportation & Installation Support

HGIS holds an extensive track record in supporting the offshore construction and installation sector. We have been supporting main construction companies for the Pan Malaysia Transportation & Installation of Offshore Facilities since 2010.

HGIS is a service provider that truly understands the nature and processes of offshore construction and installation offering the best solutions for the installation of:

- Rigid Pipelines
- Flexible Flowline and Umbilical
- Spoolpiece / Jumper and Tie-In Operations
- Subsea Structure such as PLEMS or PLETS
- Subsea Power or Fiber Optic Cables
- Subsea Rock Installation
- Trenching and Dredging Operations

## FEATURES

- ✓ Expertise in Inertial Navigation System (INS) results in potential time and equipment savings leading to a reduction in overall costs.
- ✓ Integration of high accuracy tools to provide real-time positioning and navigation and overcoming any drop-outs.
- ✓ HGIS BMS & TMS X-BOX proven design and survey grade instrumentation with high accuracy, reliability and update rate.
- ✓ Latest Sonardyne 6G Technology with improved accuracy in precise acoustic range and high-speed data telemetry.
- ✓ Acquire accurate reports on the final absolute position to monitor and detect any lateral displacement. (horizontal alignment).
- ✓ Identify and assess the status of freespans, uplifts, trenching works and self-burial along the product route (vertical alignment).
- ✓ Report accurate positions of any external damage, debris/seabed features in close proximity to the product.
- ✓ Receive your data and reporting with OGP Seabed Survey Data Model (SSDM) compliance formatting.

### HEADQUARTERS

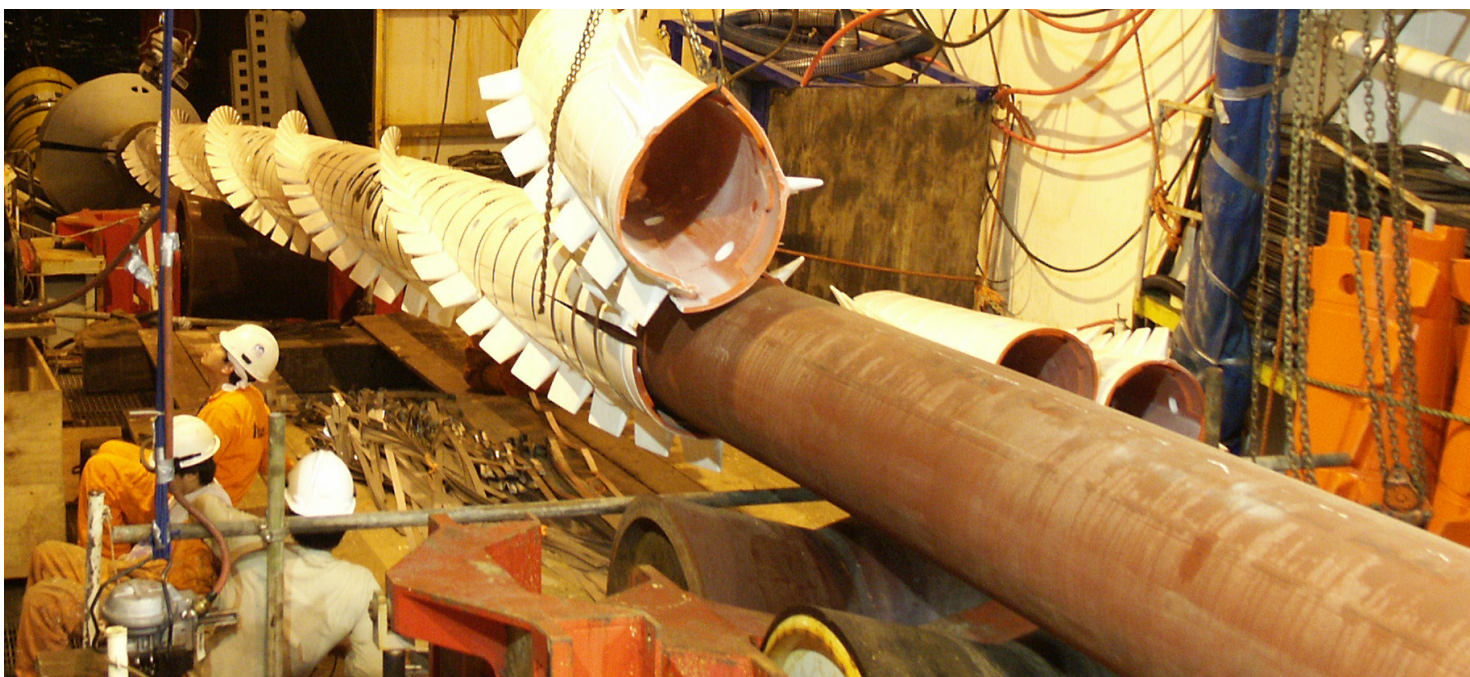
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## ROUTE CLEARANCE SURVEY FOR PRE-FEED OR FEED STAGE

### BENEFITS



#### Plan it Early

Early stage requirements for pre-engineering survey.



#### Identify the Features

Perform Geophysical and Geotechnical samplings.



#### Know Your Route

Determine the suitability of the selected routes.



#### Identify Hazards

Acquire accurate data and identify potential hazards to determine the best pipeline route.

## PRE-LAY OR POST-LAY SURVEY (OFFSHORE/ NEARSHORE)

### BENEFITS



#### Bathymetry Map Acquisition

Acquire accurate water depth bathymetry map showing the topography of the seabed within the survey corridor.



#### Mapping Of Anchoring Corridors

Ensure that the anchoring corridors are clearly mapped for seabed obstructions that may impede the installation process.



#### Lateral Variations Identification

Check and identify lateral variations of the shallow and intermediate lithostratigraphy based on acoustic characteristics.



#### Crossing Points Identification

Identify crossing points of existing pipelines, submarine cables and any other item close proximity to the design route.



#### Final Confirmation

Post-lay survey of the flowline, umbilical, pipeline and record of position and condition of the structure laid.



#### Mean Seabed Topography Acquisition

Pre and Post Trench/Dredge Survey acquiring seabed topography and mean seabed level around the proposed dredging/trenching location.

## PIPE LAY POSITIONING & NAVIGATION SUPPORT

### BENEFITS



#### Control During Lay

Provide position and heading control during lay to maintain the predicted Touchdown Point (TDP).



#### Horizontal Offset

Monitor the horizontal offset on any associated fixed point on the vessel to the line's TDP (layback).



#### Final As-Installed

Acquire final as-installed position fixes relative to the design data at pertinent locations.



#### Monitor Cross-Course

Monitoring of the cross-course distance from the ROV pipeline/flexible TDP to the design route centerline.



#### Mattress/Sleeper Positioning

Provide underwater acoustic positioning of mattress/sleeper support where an existing pipeline or cable is crossed.



#### Measure with Acoustic

Provide Underwater Acoustic Positioning and LBL subsea metrology for any subsea structure installation such as PLEM, PLET or Spool Piece.

## OTHER RELATED SERVICES

- Provision of Onshore Engineering and Topographical Survey.
- Provision Survey Support for Trenching and Dredging Operations.
- Provision of Post Pipeline/Cable Burial Survey.
- Provision of Survey Support for Rock Installation Operations.
- Provision of Positioning Support for ROV Inspections / Installations.
- Decommissioning and Abandonment Survey Support.