



Trust Us , Meet Your Goal

Engineering

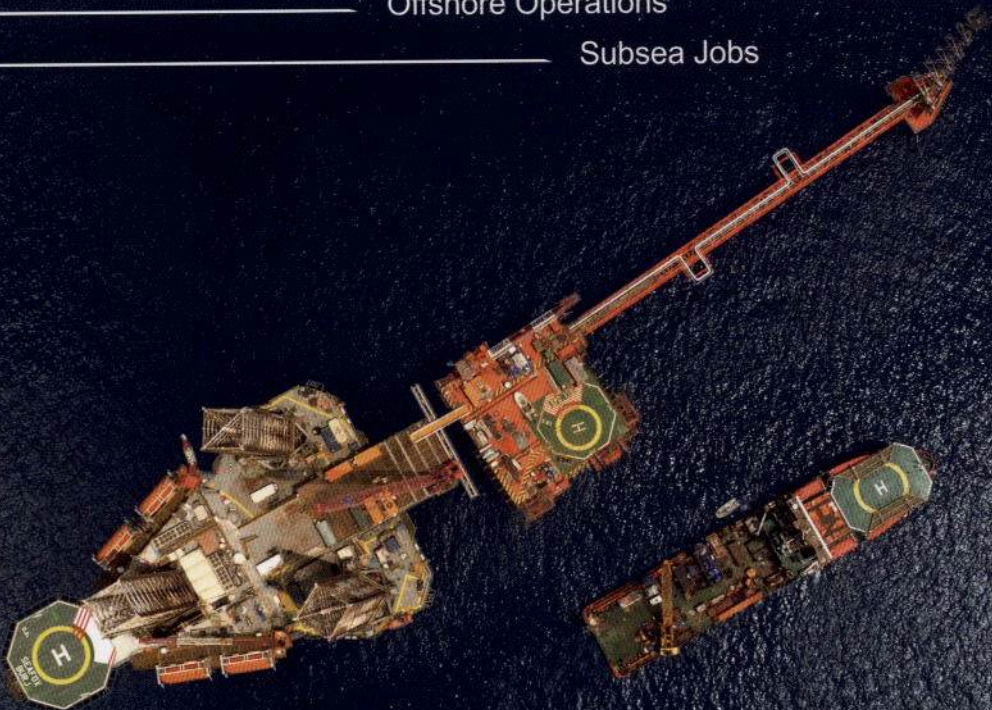
Procurement

Construction

Installation

Offshore Operations

Subsea Jobs



About Us

RAL company has been established with the intention of providing industrial and marine engineering services.

Having experience in the field of Oil & Gas technology and relying on professional staff cooperation, RAL is capable of providing offshore structure engineering services based on international standards.

Owning appropriate equipment pertinent to this field of industry, RAL endeavors to reduce the existing gap between service quality of domestic and foreign companies in both onshore and offshore fields.

Obtaining several certification standards and popular clients "letter of satisfaction", verifies our above mentioned claim.





Scope of works

- Engineering
- Procurement
- Construction
- Installation
- Offshore Operations
- Subsea Jobs



Engineering

Pipeline design and Installation

The Engineering team capability comprises Basic design, detailed design and detailed installation engineering for subsea pipelines. We do this with success by an expertised, experienced Engineering team.

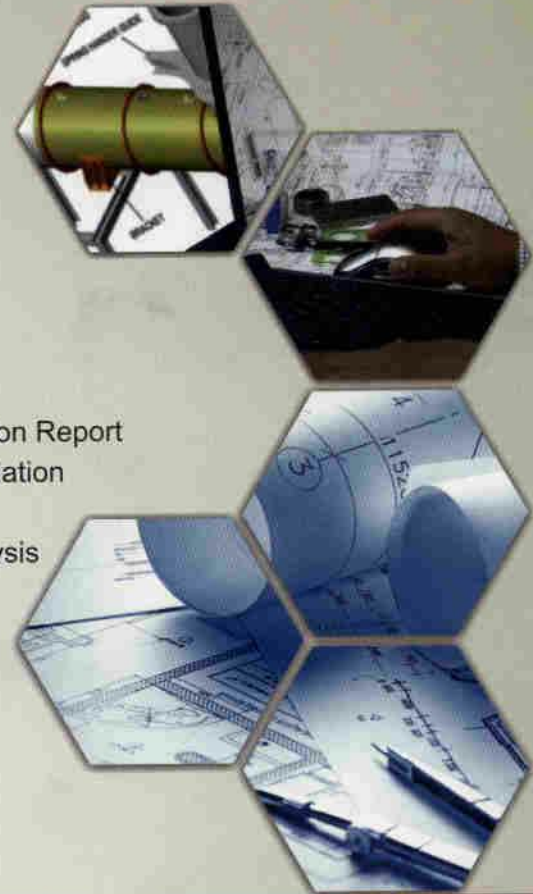
Our capabilities and experiences include:

Basic & Detail design

- Hydraulic Analysis
- Pipeline Wall Thickness and Material Grade Verification Report
- On-bottom Stability Analysis-Concrete Coating Calculation
- Offshore Cathodic Protection Design
- Allowable Span Length and Bottom Roughness Analysis
- Lateral Buckling Analysis

Installation Analysis

- Pipeline installation analysis
- Mooring Analysis
- Sea fastening and Transportation analysis
- Stability Analysis



Structure Design and Installation

Basic & Detail design

- In place Analysis
- Seismic Analysis
- Pile Drivability Analysis
- Float-Over Analysis
- On bottom Stability Analysis

Installation Analysis

- Transportation Analysis
- Load-Out Analysis
- Lifting Analysis
- Launching Analysis





Procurement

Procurement

Our Procurement department activities rely on Quality, Prompt and Accurate action considering the standard rules and cooperation of qualified staff who are highly experienced through various projects.

This leads to an optimized output of this department and continual evaluation to achieve the best results for each project.

We believe each project has its special conditions which makes it different from any other project.

Thus we devise special plan for each project which results in flexibility during the project execution and preparation for any upcoming situations. Procurement department also keeps the records of customer's satisfaction, in order to take necessary amendment actions for the next similar projects.

Mission Statement

The Procurement Department is committed to support the RAL mission by offering services and programs to the company that result in the highest value and ultimate customer satisfaction, while embracing a spirit of continuous improvement. Additionally, the procurement department will enforce purchasing and procurement policies and procedures. At all times the procurement department will strive to provide its services with personal and professional standards that reflect the principles of ethics, integrity and respect.



KL Branch

RAL has established an International branch office at Kuala Lumpur, Malaysia under the name of RAL Subsea Sdn. Bhd. with the aim of service efficiency improvement.

Recognizing the global oil and gas market, The Malaysian branch has tight relationship with foreign vendors. Thus RAL ensures that there would be no risk in procuring required equipments and instruments for specific projects.

- Foreign purchasing and supplying goods, Equipment, Tools, Services and works.
- Domestic purchasing and supplying goods, equipment, tools, services and works.
- Supplying special equipment and tools.

Construction

RAL Construction Department's outstanding staff relies on various offshore projects experience and strives to provide the best quality, safety and consistency.

Our personnel make the difference displaying a level of dedication and experience beyond the continuous training keep them in top form, holding certifications in related fields.

This department provides fabrication, repair and maintenance services to the offshore industry.

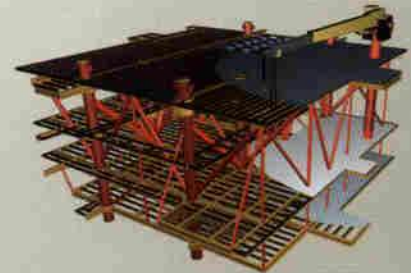
Fabrication of land based and offshore construction are performed owning all necessary and appropriate equipment and components.

Our fabrication services shall also be offered on designated site to the customers' direction and needs.

We design, fabricate, assemble and install offshore systems and structures and test them as per each project specifications.

In addition, we also provide clients with our repairs, maintenance, upgrading and refurbishing and revamping services in accordance to their requirements.

- Jacket and topside Construction
- Spool and riser fabrication
- Fabrication of special material items. e.g. Inconel
- Fabrication of PLEM
- Fabrication of SBM
- Subsea support and mattress fabrication
- Design and fabrication of special clamps
- Subsea pipelines testing and Pre – Commissioning
- Trenching and shore approach services





Installation

Offshore Operations

We have extensive industry knowledge and experience in various installation areas.

We are able to offer our clients expertise in all areas of offshore design, project management, transportation and installation which further enhances our services to our customers.



- Offshore Platforms installation
- Riser Installation
- PLEM & SBM Installation
- Revamping and Existing Platform maintenance
- Offshore projects management
- Offshore platforms renovation and maintenance
- PLEM & SBM installation
- Riser replacement and Installation
- Shore Pull



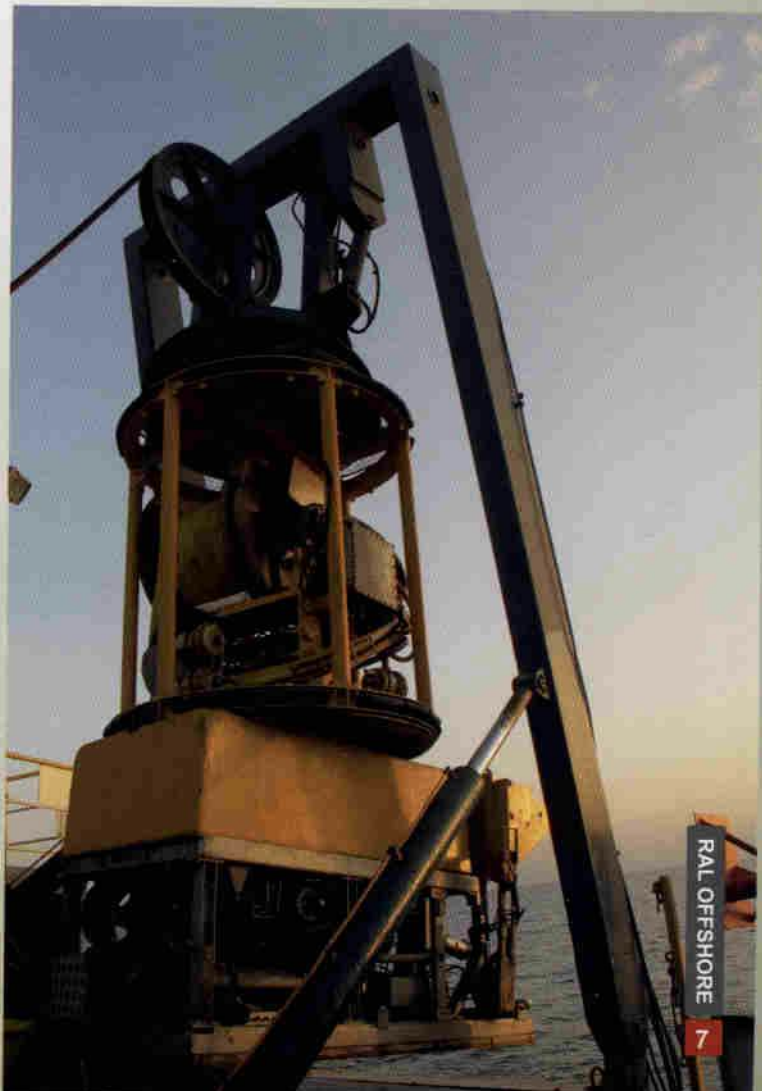
Installation

Subsea Services

As an integrated subsea contractor, RAL provides a range of subsea services to support the delivery of technically reliable and viable solutions to clients in all environments.

Combining staff expertise with RAL's subsea assets and systems, we are able to deliver various projects depending on client's requirements. Our subsea services include but not limited to:

- ↻ Subsea Pipeline Installation
- ↻ Subsea Pipeline tie-in and Spool piece installation
- ↻ Subsea Pipeline Free span rectification
- ↻ Subsea Crossing Support Installation
- ↻ Subsea pipeline protection
- ↻ Subsea pipeline maintenance
- ↻ Subsea pipeline and jacket Inspection & Anode installation



RAL

**PERFORMING & FINISHING OF
OFFSHORE & ONSHORE
PROJECTS
IS OUR
SPECIAL
EXPERTISE**

EPCI

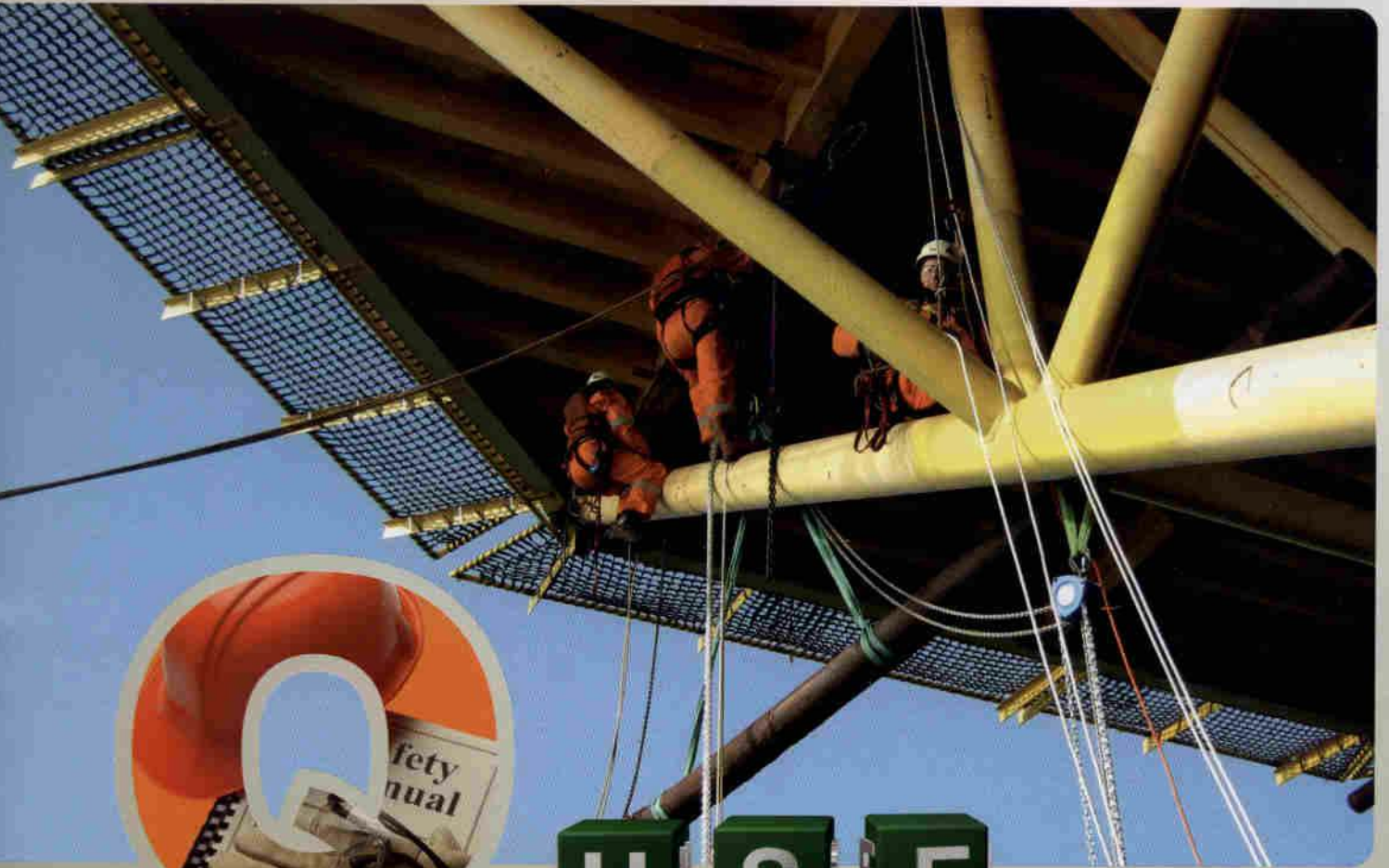


RAL Offshore is originally organized to provide offshore services to the Oil&Gas companies in and around Iran. RAL's reputation as a Professional and innovator company has advanced through over several years of experience.



QHSE

One of the major objectives of organizations related to Oil, Gas and Petrochemical industry is to implement the Quality Management System, Occupational Health and Safety Management system and Environmental Management system.



H S E

Consistent with the Iranian Ministry of oil, RAL has run an integrated management system consisting of Quality Management System based on ISO 9001, ISO 14001-based environmental management and occupational health and safety management system based on OHSAS 18001 and established the QHSE management system among the organization.

INTEGRATED MANAGEMENT SYSTEM POLICY

Quality, safety, health and environmental issues are considered as high values in RAL Company. We aim to meet client's objectives having the vision of promoting customer satisfaction through promoting sustainable development, creating a safe work environment and preventing possible damages to property and the environment.



Our approach:

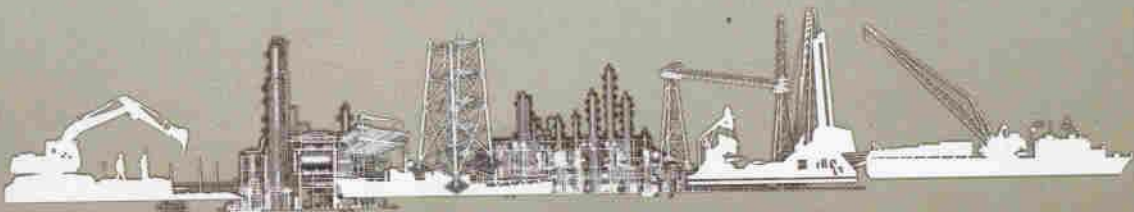
Meeting all expectations of clients, paying particular attention to the sustainable development, health promotion of staff and their aspects of occupational health and safety, promoting the growth and development of human resources, increase productivity and to enhance all stakeholders' satisfaction.

We believe that the proper operation of the QHSE ensures productivity and quality which will result in promoting the satisfaction of all stakeholders. Management patterns of ISO 9001:2008, OHSAS 18001:2007, ISO 14001:2004 and HSE-MS have been implemented by the staff and the organization's senior management in this regard.

Our commitments:

- Codification of Policies, principles and requirements associated with the Integrated Management System of Quality - Safety, Health and Environment
- Reducing the Non-compliances and re-work in projects
- Improving the technical capability of the company staff
- Prioritize issues of health, safety and the environment in all activities
- Monitoring, evaluating and continuous improvement of the quality - Safety, health and environmental performance through designation of operational standards, training, evaluations and audits
- Development of preparedness to fight or emergency response through enhanced training of the staff based on the latest technologies
- Reducing the waste and to conserve the energy resources
- Requiring contractors to comply with QHSE issues related to standards and company policies
- Transparent QHSE Reporting and Information through the whole organization

Committed to establish, operate and improvement of this system, Company Management underscores participation and responsibility of staff to implement it effective.



Certificates



GALAXY
ISO 9001:2008
ISO 14001:2004
OHSAS 18001:2007
HSE-MS

We aim to meet client's objectives having the vision of promoting customer satisfaction through promoting sustainable development, creating a safe work environment and preventing possible damages to property and the environment.

PROJECTS BRIEF LIST

- SPGFD - Phases 17 – Installation and Pre-commissioning of 20" & 4" offshore pipelines
- SPGFD - Phases 14 Project -Concrete Crossing Supports and Mattresses Installation
- SPGFD-Phase 22- Metrology, Spool pieces fabrication, Installation, Hydro Test and Pre-commissioning
- SPGFD-Phase 19- Spool Installation, Hydro Test and commissioning
- SPGFD-Phase 19-LBL metrology of 18" infield spools
- SPGFD-Phases 17&18- ROV survey for 4" pipeline and Diving services
- SPGFD-Phases 15&16- ROV survey for 4" pipeline of phase 16
- SPGFD- Phases 15&16 - free spans correction
- SPGFD-Phases 20&21-Installation of crossing supports and concrete mattresses
- SPGFD - Phases 13 & 22-24 - Installation of crossing supports and concrete mattresses
- SPGFD - Phase 2- ROV survey for 4" pipeline of SPD3
- Salman-Sirri gas transmission pipeline project - Detail Design Engineering
- Salman-Sirri gas transmission pipeline project – Project management
- SPGFD - Sirri-Assalouyeh 32" pipeline Geo-Bag Installation
- Salman-Sirri gas transmission pipeline project -Pre Engineering of seabed services
- Salman-Sirri gas transmission pipeline project – Subsea pipeline detail design
- SPGFD - Phase8 - Leak verification of phase 8 pipeline
- SPGFD - Phase 15/16/17/18 - Crossing support and concrete mattress Installation
- SPGFD - Phase 1- Offshore platforms- Replacement of existing 18" risers
- SPGFD -Phases 15&16 - Free span rectification
- Ferdowsi field development project - Securing 30" conductor pipe
- Hengam field development project – Metrology ,spool Installation, ROV survey, and free span correction



SPGFD-Phase 22- Metrology, Spool pieces fabrication, Transportation, Installation & Pipeline Hydro Test, Pre-commissioning of 32" & 4" offshore pipelines

Location:

South Pars Gas Field – Persian Gulf, Iran

Purpose:

Metrology, Spool Fabrication, Transportation, Installation and Pre-commissioning of phase 22-24 spools

Scope of work:

Metrology, fabrication, transportation, installation of 32" and 4" Spools, Pre-commissioning and hydro-test of 32" and 4" piggy back pipelines of phase 22 .

- ☛ LBL Metrology between laydown points of the laid pipe line to SPD22 platform risers
- ☛ Fabrication of Spools
- ☛ Transportation of all fabricated spools from fabrication yard to port
- ☛ Transportation from port to offshore Site
- ☛ Pipeline flooding
- ☛ Spool installation
- ☛ Flooding, Cleaning and gauging
- ☛ Pre-commissioning and hydro-test of offshore pipelines



Description	Client	Year
SPGFD-Phase 22- Metrology, Spool pieces fabrication, Installation, Hydro Test and Pre-commissioning	POGC/PSA/IOEC	2015-2016





Salman-Siri Gas Transmission Pipeline Project -Pre Engineering of Seabed Services

Location:

Sirri Island – Salman Oil Field

Purpose:

Pre-Engineering survey of 150 km 30 inch export pipeline

Scope of work:

The survey scope of work included Geophysical & Geotechnical Route Survey consisting offshore, inshore and onshore areas for the following points:

- Geophysical survey for about 150 km pipeline route with 500m width corridor from KPP platform in Salman field to Sirri Island
- Geophysical survey was done using SBES (or MBES) SSS and magnetometer in 500m corridor
- Sufficient Gravity Core Samplings were done along the proposed route



Description	Client	Year
Salman-Siri Gas Transmission Pipeline Project Pre Engineering of Seabed Services	PEDEC	2012

Salman - Sirri Gas Transmission Pipeline Project – Subsea Pipeline Detail Design

Location:

Sirri Island – Salman Oil Field

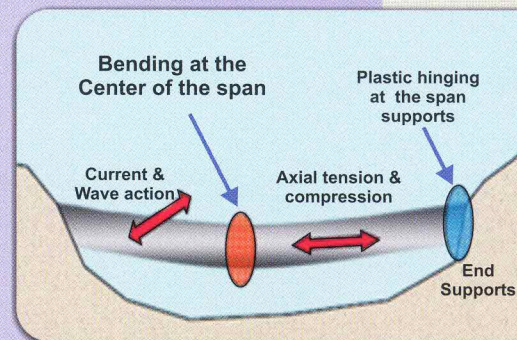
Purpose:

Detail design engineering of 150 km 30 inch subsea pipeline

Scope of work:

The Engineering scope of work included the below items:
Pipeline detailed engineering for the project was based on the following sequences:

- Review the documents generated through FEED
- Optimization of pipeline routes
- Detailed Engineering calculation / analysis including on bottom stability analysis, span/stress analysis, expansion/spool piece/riser analysis, cathodic protection design/Lateral Buckling detail analysis
- Detailed Engineering drawings included field layout, platform approaches, spool piece details, riser GA



Description	Client	Year
Salman-Siri Gas Transmission Pipeline Project -Subsea Pipeline Detail Design	PEDEC	2012



SPGFD - PHASES 15&16 Offshore Pipelines- Inside Trench Free Span Correction

Location:

South Pars Gas Field – Persian Gulf, Iran

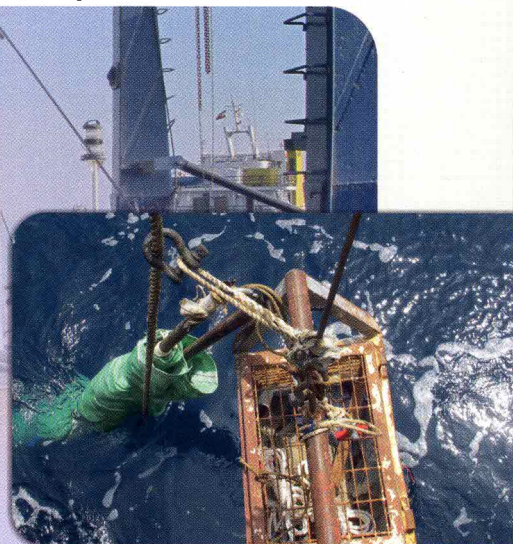
Purpose:

In-Trench Pipeline Free Span Rectification

Scope of work:

Inside Trench Free Span Correction of the offshore pipeline of Phase 16 of South Pars Gas Field in the Persian Gulf

The free spans were distributed between landfall point and KP 4.842 of 32 inch pipeline. Grout bags were applied as supports for free span correction in this project.



Description	Client	Year
SPGFD - PHASES 15&16 Offshore Pipelines- Inside Trench Free Span Correction	Pars Oil and Gas Company POGC	2013

Salman-Siri Gas Transmission Pipeline Project - Management

Location:

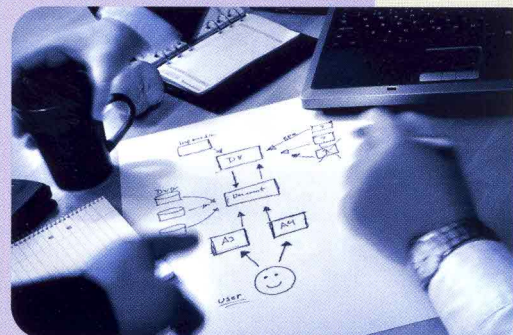
Sirri Island – Salman Oil Field

Purpose:

MC of EPCF in Salman - Sirri gas transmission pipeline project

Scope of work:

As RAL company has knowledge and expertise of EPCF project and in the area of international contractual negotiation, developing, execution, operating and managing Salman - Sirri gas transmission pipeline project was carried out by our company.



Description	Client	Year
Salman-Siri Gas Transmission Pipeline Project - Management	PEDEC	2012



SPGFD - PHASE 8 - Leak Verification of Phase 8 Pipeline

Location:

South Pars Gas Field – Persian Gulf, Iran

Purpose:

The 32" pipeline transfers the gas and condensates produced on the wellhead platform SDP9 to onshore facility. There was a flange leakage between pipeline and spool near the SPD9 platform

Scope of work:

To verify the flange leakage between 32" pipeline and its spool



Description	Client	Year
SPGFD - PHASE 8 - Leak Verification of Phase 8 Pipeline	Pars Oil and Gas Company POGC	2011

SPGFD - 32" Siri - Assalouyeh Pipeline Geobag Installation

Location:

Sirri Island

Purpose:

To provide pipeline protection in Sirri Island

Scope of work:

32 inch Siri – Assalouyeh Pipeline Bag installation while the bags had to be installed from the coastline to the depth of 22m on the seabed



Description	Client	Year
SPGFD - 32" Siri - Assalouyeh Pipeline Geobag Installation	Iranian Offshore Engineering and Construction Company - IOEC	2010



SPGFD - PHASES 15/16/17/18 -Crossing Support and Mattress Installation

Location:

South Pars Gas Field – Persian Gulf, Iran

Purpose:

Crossing Support and Mattress Installation

Scope of work:

Crossing Support and Mattress Installation for the offshore pipelines of Phases 15/16/17/18 of South Pars Gas Field



Description	Client	Year
SPGFD - PHASES 15/16/17/18 - Crossing Support and Mattress Installation	Pars Oil and Gas Company POGC	2011

SPGFD - PHASE 1 Offshore Platforms Replacement of Existing 18" Risers

Location:

South Pars Gas Field – Persian Gulf, Iran

Purpose:

The gas and condensates produced on the wellhead platform SPD1 & SPD2 are transported to the process platform SPP1 via an 18" pipeline and transferred to onshore facility via 32" pipeline. The 18" pipeline, laid in November 2003, was found to be damaged and eventually after detailed engineering the 18" pipeline and related spools was replaced by new one in 2008. This project deals with the replacement of the 18" risers on SPD2 and SPP1 platforms.

Scope of work:

The project consisted of removing the old risers, Installation the new ones and Hydro testing of pipeline associated from riser flange at the top of SPD2 to SPP1.



Description	Client	Year
SPGFD - PHASE 1 Offshore Platforms Replacement of Existing 18" Risers	Petro Pars Company PPL	2011



SPGFD - PHASES 15&16 - Offshore Pipelines Free Span Correction

Location:

South Pars Gas Field – Persian Gulf, Iran

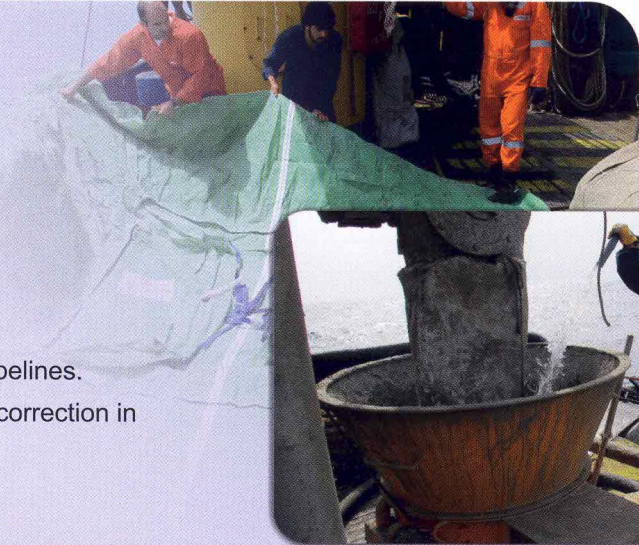
Purpose:

Existing pipeline Free Span Rectification

Scope of work:

Free span correction of phases 15 & 16 offshore pipelines.

Grout bags were applied as supports for free span correction in this project.



Description	Client	Year
SPGFD - PHASES 15&16 - Offshore Pipelines Free Span Correction	Pars Oil and Gas Company POGC	2011

Ferdowsi Field Development Project - Securing 30" Conductor pipe

Location:

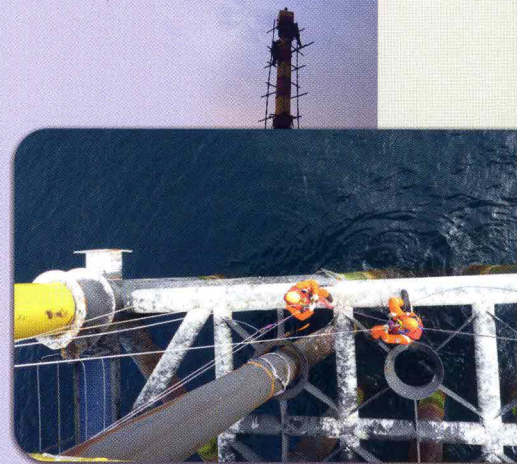
Ferdowsi Offshore Field– Persian Gulf, Iran

Purpose:

Support the existing 30" Conductor pipe due to absence of drilling rig before arrival of the new rig

Scope of work:

Installation of two clamps on 30" Conductor pipe in order to secure it to the seabed with 8 anchors.



Description	Client	Year
Ferdowsi Field Development Project - Securing 30" Conductor pipe	DANA ENERGY Co.	2010





Hengam Field Development Project

Location:

Hengam Field - Persian Gulf, approximately 45 km south of Queshm Island

Purpose:

One 16" well fluid transportation submarine pipeline (with 4" piggy-back MEG line) will carry the raw offshore production from the wellhead platform up to the onshore treatment plant

Scope of work:

Survey of 16" pipeline from wellhead to plant – Metrology & Installation of Spools , Free Span Correction and Bag Installation.

The project consisted of Spool piece metrology with LBL services and spool installation, As built survey of total pipeline from the wellhead platform up to the onshore treatment plant, Free span rectification of 16" pipeline between the platform and Hengam island (groute bag installation).



Description	Client	Year
Hengam Field Development Project	Iranian Offshore Oil Company IOOC	2010





SPGFD-Phase 19- Spool Installation, Hydro Test and commissioning of SPD phase 19 project 32" & 4" pipelines

Location:

South Pars Gas Field – Persian Gulf, Iran

Purpose:

Pre-fabricated 32" and 4" Spools Transportation, Installation and Pre-commissioning of phase 19 – 19A and 19C platforms

Scope of work:

Engineering, Review Metrology Documents, Checking and confirming Dimension Control of fabricated Spool pieces, performing FCG, Spools Load out verification, Spool piece installation and Tie-in Operation, as-built survey of Dog legs and riser clamps, performing HSDN.

Two tie-in operations including installation of 10 pieces of spools had to be performed by RAL: 4 X 32 inch and 6 X4 inch.



Description	Client	Year
SPGFD-Phase 19- Spool Installation,Hydro Test and commissioning	POGC/PPL/IOEC	2015

SPGFD-Phase 19-LBL metrology of 18" infield spools

Location:

South Pars Gas Field – Persian Gulf, Iran

Purpose:

LBL Metrology of SPD19A, SPD19 B, SPD19C and SPD2 platforms

Scope of work:

To provide vessel and underwater positioning services using LBL for running accurate spool piece metrology for 18" pipeline in SPD19A, SPD19B, SPD19C, SPD2 platforms.

In brief the spool metrology was to identify distance and angle between flange of riser and flange of pipeline



Description	Client	Year
SPGFD-Phase 19-LBL metrology of 18" infield spools	POGC/IOEC	2015



SPGFD-Phases 17&18- ROV survey and diving services for 4" pipeline of phase 18 and diving services for 4" spool opening of phase 17

Location:

South Pars gas field - Persian Gulf, Iran

Purpose:

Diving services for pig rescuing and flange bolt tightening & 4-inch pipeline ROV Survey for Leak detection

Scope of work:

ROV video survey to detect leak from shore approach area on SPD18, 4" pipeline continues to SPD 18A (24) platform. Diving services in order to open the flange of spool piece, fastening the net on both sides of the spool, rescuing the pig after pig running and fastening the flange completely with bolt tightening equipment in 4-inch pipeline of SPD 17.



Description	Client	Year
SPGFD-Phases 17&18- ROV survey and Diving services	POGC	2015

SPGFD-Phases 15&16- ROV survey for 4" pipeline of phase 16

Location:

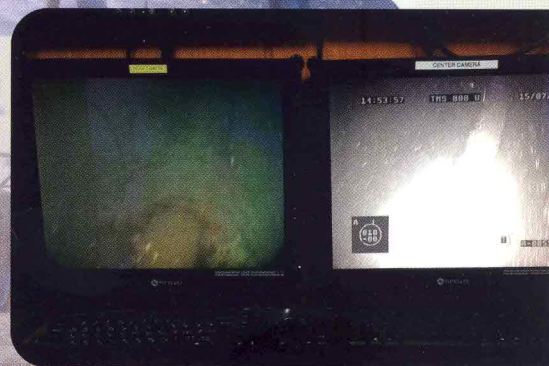
South Pars Gas Field – Persian Gulf, Iran

Purpose:

4 inch pipeline ROV Survey for Leak detection

Scope of work:

ROV video survey to detect leak from shore approach area on SPD 16 platform



Description	Client	Year
SPGFD-Phases 15&16- ROV survey for 4" pipeline of phase 16	POGC	2014



SPGFD- Phases 15&16 - Correction of Remaining Free Spans of offshore pipelines

Location:

South Pars Gas Field – Persian Gulf, Iran

Purpose:

Existing pipelines free span rectification

Scope of work:

Free span correction of remaining spans for phases 15 & 16 offshore existing pipelines using grout bags which were applied as supports for free span correction in this project



Description	Client	Year
SPGFD- Phases 15&16 - free spans correction	POGC/IOEC	2014

SPGFD-Phases 20&21- Load out,sea fastening,transportation, and Installation of steel crossing supports and concrete mattresses

Location:

South Pars Gas Field – Persian Gulf, Iran

Purpose:

Installation of Crossing Supports and Mattress for Pipelines of South Pars phases 20-21 project

Scope of work:

Loading, sea fastening, transportation and installation of concrete Mattresses and Metal Crossing Supports from Client Port to Installation Locations at pipeline routes phases 20-21 of South Pars Gas Field in Persian Gulf



Description	Client	Year
SPGFD-Phases 20&21-Installation of crossing supports and concrete mattresses	POGC/IOEC	2014



SPGFD - Phases 13 & 22-24 Project - Installation of Crossing Supports and Mattresses

Location:

South Pars gas field - Persian Gulf, Iran

Purpose:

Installation of Crossing Supports and Mattress for Pipelines of South Pars Phases 13 & 22-24 Projects

Scope of work:

Loading, sea fastening, transportation and installation of Concrete Mattresses and Metal Crossing Support from Client Port to Installation Locations in pipeline routes at south pars phases 13 & 22-24 in Persian gulf.



Description	Client	Year
SPGFD - Phases 13 & 22-24 Project - Installation of Crossing Supports and Mattresses	POGC/IOEC	2014

SPGFD - PHASE 2 -4" Subsea Pipeline ROV Survey in SPD3

Location:

South Pars Gas Field – Persian Gulf, Iran

Purpose:

ROV Survey for 4" Piggy back Subsea Pipeline of SPD3 Phase2

Scope of work:

Based on Client information phase 2 pipeline (SL1) from shore to SPD3 was damaged by Anchoring activity so the objectives of Pipeline Inspection survey were as follows:

- Gathering Geophysical survey data from shore on SL1 pipeline to platform
- Locating the SL1 pipeline and its piggy back
- Locating the exact damage point of pipeline
- Visual Inspection by ROV on damage point(s)



Description	Client	Year
SPGFD - PHASE 2 -4" Subsea Pipeline ROV Survey in SPD3	POGC	2013



SPGFD - Phases 14 -Concrete Crossing Supports and Mattresses Installation

Period: 2016 - 2017

Implementation status: Completed

Location:

South Pars Gas Field – Persian Gulf, Iran

Purpose:

Installation of Concrete Crossing Supports and Mattresses for Pipelines of South Pars Phase 14

Client:

Iranian Offshore Engineering & Construction Company (IOEC) & Pars Oil and Gas Company (POGC)

Scope of work:

Load out, sea fastening, transportation and installation of 44 Ton concrete crossing supports & 7 Ton mattresses from Asia Pacific & Pars ports to installation locations at South Pars Gas Field Phase 14 Pipeline Routes with very high accuracy.

- Load out of concrete crossing supports & mattresses in Asia Pacific port
- Transportation of concrete crossing supports & mattresses to phase 14
- Installation of concrete crossing supports & mattresses in Phase 14 field

Execution date:

November 2016 - January 2017



Description	Client	Year
SPGFD - Phases 14 Concrete Crossing Supports and Mattresses Installation	POGC/IOEC	2017



SPGFD - Phases 17 Metrology, Infield Pipeline Spool Transportation, Installation and Pre-commissioning of 20" & 4" offshore pipelines

Period: 2017

Implementation status: Completed

Location:

South Pars Gas Field – Persian Gulf, Iran

Purpose:

Metrology, Infield Pipeline Spool Transportation, Installation and Pre-commissioning of phase 17

Client:

Iranian Offshore Engineering & Construction Company (IOEC)
& Pars Oil and Gas Company (POGC)

Scope of work:

The scope of work was to carry out the metrology, 20-inch and 4-inch infield pipeline spool pieces, transporting the spools from yard to offshore site, installation of Spools, Pre-commissioning of 20 inch and 4 inch infield pipelines of phase 17 South Pars gas field development project.

- LBL Metrology between laydown points of the laid line to SPD17 A & SPD17B platform risers
- Transportation of all fabricated spool pieces from fabrication yard to phase 17 field
- Spool installation
- Flooding, Cleaning and Gauging
- Pre commissioning and hydro test of offshore pipeline

Execution date:

February 2017 – April 2017

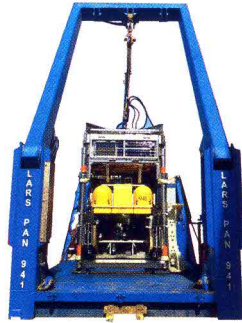
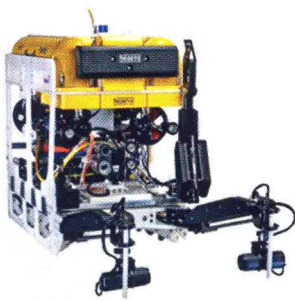


Description	Client	Year
SPGFD - Phases 17 Metrology, Infield Pipeline Spool Transportation, Installation and Pre-commissioning of 20" & 4" offshore pipelines	POGC/IOEC	2017

SEAEYE PANTHER-XT SPECIFICATIONS

TOOLING

A typical Panther-XT package includes two heavy duty five and six function manipulators. These have an integral 12mm rope cutter.



PANTHER-XT DEPLOYMENT AND OPERATION TETHER MANAGEMENT SYSTEM

For work at greater depths, in higher currents and for faster travel to and from the working zone, as well as greater protection of the vehicle through the splash zone, it is usual to deploy the Panther-XT with a TMS. The Seaeye stainless steel TMS type 8 uses a bail arm to spool up to 200m of tether on and off a drum controlled by the ROV pilot. The TMS height can be adjusted to accommodate different tool skids.

LAUNCH AND RECOVERY SYSTEM (LARS)

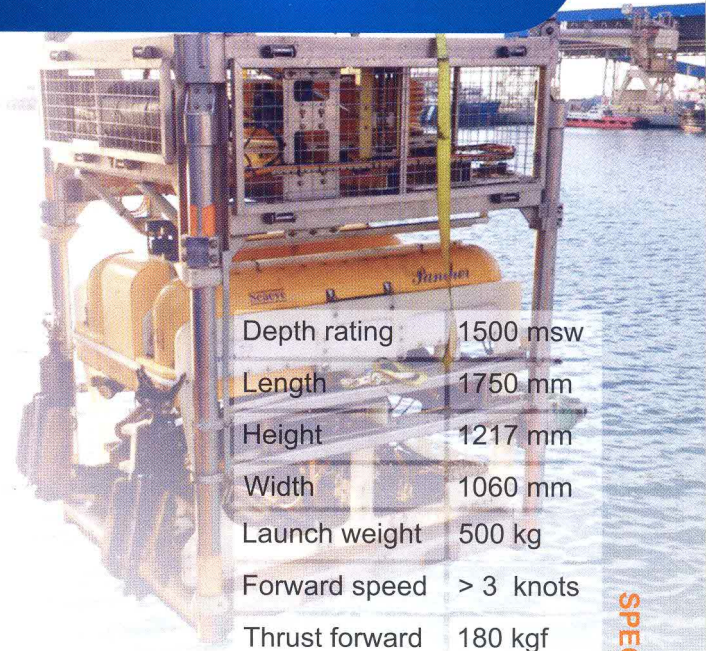
A range of different configurations and winch sizes are available to accommodate different cable lengths and applications. All our LARS are available in Safe Area or Zone 2 ratings.

An A-frame, hydraulic power unit and winch with an armored lift umbilical is the most commonly used launch and recovery system.

CABIN

The surface control equipment and power supplies can either be installed directly into the customer's facility or integrated into a custom ISO control cabin.

Custom-built control cabins, workshops and storage containers are offered in both Safe Area and Zone 2 ratings and can be tailored to suit customer-specific requirements.



Depth rating	1500 msw
Length	1750 mm
Height	1217 mm
Width	1060 mm
Launch weight	500 kg
Forward speed	> 3 knots
Thrust forward	180 kgf
Thrust lateral	125 kgf
Thrust vertical	110 kgf
Payload	110 kg

SPECIFICATIONS



SEAEYE PANTHER-XT ROV

The Seaeye Panther-XT benefits from excellent handling and is capable of accommodating a wide range of heavier duty tooling for work tasks including drill support, pipeline survey, salvage and IRM to depths of up to 1500 meters.

PROPULSION

Four vectored horizontal and two vertical brushless SM7 500V DC thrusters provide full three-dimensional control of the Panther-XT.

AUTOPILOT FUNCTIONS

Auto heading
Auto depth
Auto altitude (optional)

VIDEO SYSTEM

As standard three live video channels are available (up to six with optional port pod upgrade). HD video is optional.

LIGHTING

The Panther-XT is fitted with four long-life LED lights (on two individually controlled channels). They provide excellent illumination with very low power consumption and are very robust.

COMPASS, RATE GYRO & DEPTH SENSOR

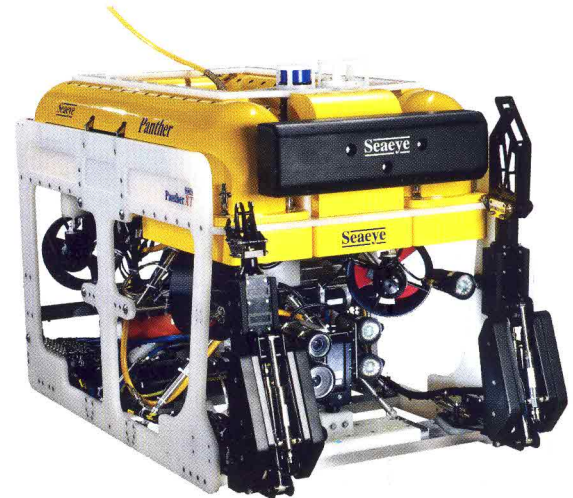
A magneto-resistive compass and a solid-state rate sensor are provided, for superior azimuth stability.

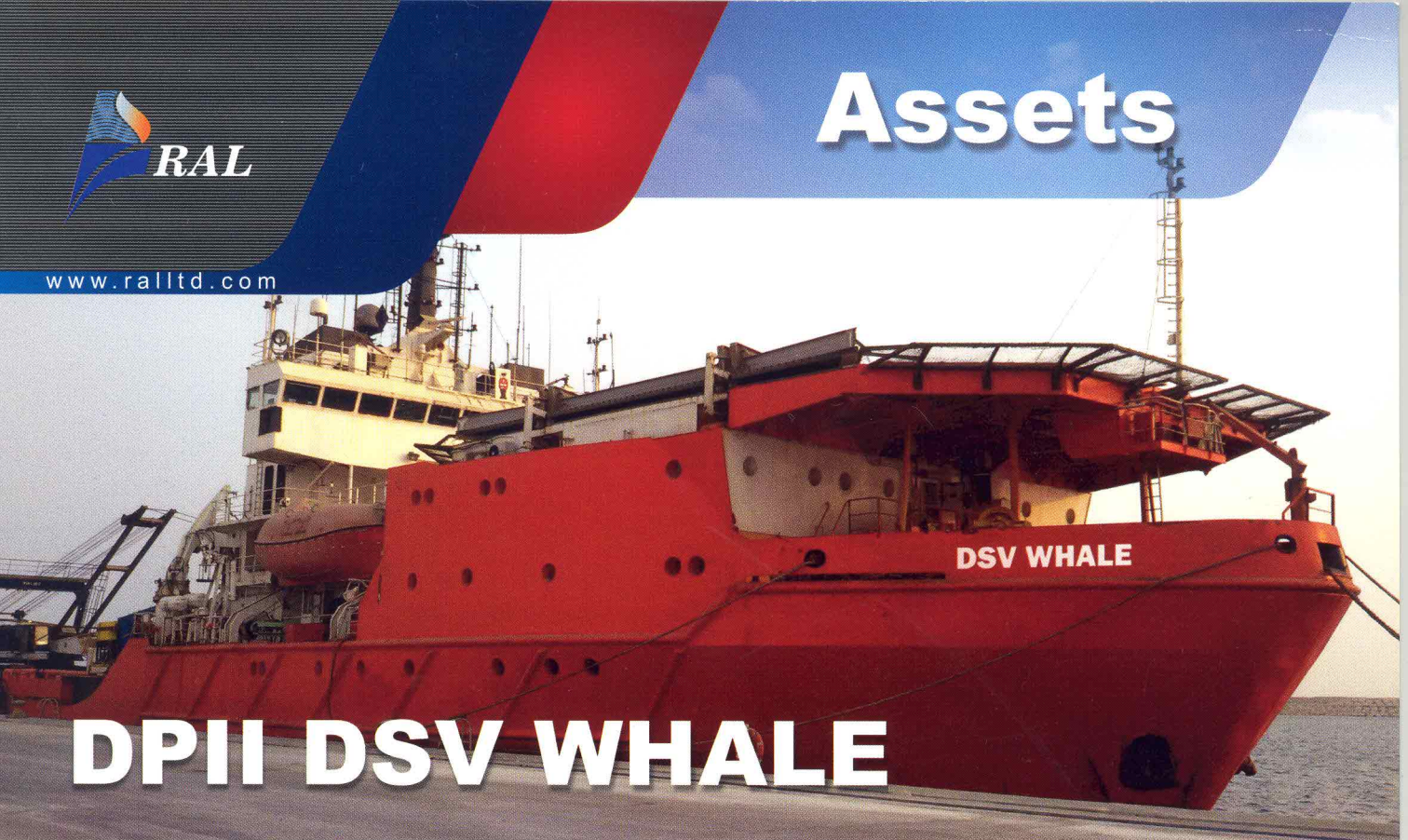
Compass accuracy	$\pm 1^\circ$
Resolution	0.1°
Update rate	98 ms

The system uses an electronic depth sensor accurate to $\pm 0.1\%$ FSD accuracy.

PAN & TILT PLATFORM

The robust high-torque pan & tilt unit can accept two cameras and lights. The pan & tilt angles are displayed graphically on the video overlay.





DPII DSV WHALE

GENERAL	Vessel Name	DSV Whale
	Type	Multipurpose Construction / Dive Support Vessel / ROV support vessel
	Builder	Richards (Shipbuilders) Ltd, Lowestoft-UK
	Delivery Date	1982
	Flag	Panama
	Call Sign	3FNQ5
DIMENSIONS	IMO Number	8002626
	Classification	LRS + 100A1 + LMC UMS DP (AA), Diving support vessel
	L.O.A.	94.30 metres
	L.B.P	87.46 metres
	Beam (Moulded)	19.50 metres
	Depth (Moulded)	7.30 metres
CARGO SPECIFICATION	Draft (Summer)	4.74 metres
	GRT / NRT	4208/1262
	Deck Dimensions	54.0 m x 15.5 m (Clear area 775 m2)
	Deck Strength	5.0 - 7.5 tonnes / m2
	Fuel Oil	1,808 m3 (+ 52.36 m3 in service tanks)
	Potable Water	587 m3
MACHINERY	Diving Gas Storage Hold	36 tubes (33.6 ft length) in cargo hold
	Diesel Electric Propulsion: Main Generators	4 x 3, 243 bhp British Polar Diesel F216V engines driving 4 x Laurence Scott & Electromotors alternators, each rated at 2,850 KVA
	Auxiliaries	Harbour Generator: 1 x 450 KW12STCWZ Dorman type Emergency Generator: 1 x 250 KW 6QT Dorman type Deck Genetator: Caterpillar Type:3306B D1 221 KW 440 V 3PH 50-60 KHZ
	Main Propulsion	2 x Laurence Scott & Electromotors propulsion motors each rated at 1865 KW driving Ulstein 4 bladed variable pitch propellers
	Bow Thrusters	2 x 800 bhp Ulstein 150TV transverse cp thrusters 1 x 1,000 bhp Lips variable pitch tunnel thruster
	Stern Thrusters	2 x 800 bhp Ulstein 150TV transverse cp thrusters
	Rudders	2 x rotating steering curt nozzles

DECK MACHINERY

Capstans	2 x 6 tonnes
Cranes	1 x 5 tonne at 13 metre outreach electro-hydraulic deck crane 2 x 4 tonne at 7.75 metre outreach Munck cranes
A-Frame	15 tonnes over stern with deck winch

MOON POOL

Dimensions	Tetrahedral shape of approximate dimensions: width; fwd 7.50m, aft 3.12m; length 6.25m
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ACCOMMODATION

Fully air conditioned heat, and sound insulated accommodation for up to 80 persons, in the following arrangement:	6 x single berth cabins with WC / Shower 16 x double berth cabins with WC / Shower 8 x three berth cabins with WC / Shower 5 x four berth cabins with WC / Shower 5 x Offices
Recreation Spaces	2 x large rec spaces and 1 x mess room
Hospital	4 x berths

HELIDECK

Construction	Aluminium Construction with hydraulic folding sides
Load Capability	Up to and including Sikorsky S61N or equivalent weight Helicopter
Reception Room	Dedicated reception room by Helideck

DYNAMIC POSITIONING SYSTEM

Computer	Kongsberg
Reference Systems	DGPS & C-NAV HPR 410 HAIPAP 501 2 x Taut wires
Redundancy	Yes

PERFORMANCE

Speed	
Maximum Trial	13.0 Knots
Cruising Speed	11.0 Knots



CONSUMPTION

Sea Passage	(max) abt 17.5 ton/day at 13 Knot Abt 10 Ton/day at 10 Knot
On DP (Average)	abt 10.5 ton/day

COMMUNICATION

Radio equipment:	Full GMDSS Equipment
V- SAT System	Intellian V 100 GX Antenna 1024/2048 Kbps
Inmarsat C	Yes
Inmarsat B	Yes

