



pipeline and subsea engineering



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SPS is an Italian engineering Company based in Fano, one of the main European centers of Pipeline Engineering. SPS has no ownership ties with operators, contractors or suppliers and therefore offers truly independent, high quality services. Since its establishment, SPS has grown in both size and experience, forming good relationships with several important Italian and International Oil & Gas companies through Projects all around the world.

SPS PROVIDES HIGHLY QUALIFIED ENGINEERING SUPPORT TO CONTRACTORS, ENABLING THEM TO SUPPLY COMPREHENSIVE, RELIABLE AND COMPETITIVE SERVICES TO OIL & GAS COMPANIES.

*SPS è una società italiana di servizi nel settore dell'ingegneria civile ed industriale con sede a Fano (PU), uno dei principali poli europei dell'ingegneria delle Pipeline. SPS non ha alcun legame di proprietà con altri contractor, operatori o fornitori e fornisce dunque un servizio di alta qualità totalmente indipendente. A partire dalla sua fondazione, partecipando a progetti dislocati in tutto il mondo SPS ha instaurato ottimi rapporti con diversi importanti operatori italiani e internazionali del settore oil & gas, sviluppandosi in dimensioni ed acquisendo grande esperienza.*

*SPS OFFRE AI CONTRATTORI SERVIZI DI INGEGNERIA ALTAMENTE QUALIFICATI, CONSENTENDO LORO DI FORNIRE ALLE OIL & GAS COMPANY UN SERVIZIO INTEGRATO, AFFIDABILE E COMPETITIVO.*

## EXPERTISE

SPS offers all the support and reliability you may be looking for, thanks to 30 years of experience and the significant role played by its Senior staff members in many of the most important Projects in Europe and beyond.

## FLEXIBILITY

SPS fits your needs, can be ready to operate at a moment's notice and can quickly respond to your requests. There is no bureaucracy, just direct contact with the people in charge.

## CERTIFIED QUALITY

SPS's Quality Management System has been certified ISO 9001 since 2007.

## ESPERIENZA

*SPS offre tutto il supporto e l'affidabilità che puoi cercare, grazie ai 30 anni di esperienza del suo personale Senior ed il ruolo significativo svolto in molti dei progetti più importanti d'Europa ed oltre.*

## FLESSIBILITÀ

*SPS si adatta alle tue esigenze, può attivarsi in breve tempo e rispondere rapidamente alle tue richieste. Non c'è burocrazia, lavorerai sempre a stretto contatto con i responsabili.*

## QUALITÀ CERTIFICATA

*SPS ha un Sistema Gestione Qualità certificato ISO 9001 dal 2007.*

# WHY SPS





# VALUES

## TRUST

SPS strives to establish long term relationships with clients. Trust and customer satisfaction are the most important assets.

## CONTINUOUS IMPROVEMENT

SPS believes that lasting competitiveness can only be achieved by a continuous improvement of the services provided. Therefore, SPS makes a point to invest in cutting edge software, training and workshops.

## ETHICS

SPS puts ethical behavior above all else. Respect for human life, safety, and fair business are part of SPS's core values.

## FIDUCIA

*SPS si impegna a stabilire con i propri clienti relazioni di lungo termine. La fiducia e la soddisfazione del cliente sono considerate il patrimonio più importante.*

## MIGLIORAMENTO CONTINUO

*SPS ritiene che la competitività sostenibile nel tempo possa essere ottenuta solo attraverso il miglioramento continuo dei servizi erogati. Pertanto, SPS investe su software all'avanguardia, formazione e corsi specifici per il suo personale.*

## ETICA

*SPS pone il comportamento etico al centro della sua attenzione. Il rispetto della vita umana, la sicurezza sul lavoro ed il fair business sono valori fondamentali per SPS.*



# VISION

SPS is committed to building a lasting future, and believes that this can be achieved by focusing its energy on establishing long lasting partnerships instead of maximizing short term revenues. With this perspective in mind, SPS tries to meet the Clients requirements and expectations by constantly improving its expertise, increasing the number of services offered and expanding its structure accordingly. SPS continually looks for new business opportunities in the Oil & Gas industry and beyond, with particular interest in renewable energies.

*SPS si impegna a costruire un futuro duraturo e ritiene che ciò possa essere raggiunto concentrando le proprie energie sulla creazione di partnership di lunga durata piuttosto che massimizzando i ricavi a breve termine. Con questa prospettiva, SPS cerca di soddisfare le esigenze e le aspettative dei clienti, migliorando costantemente le proprie competenze, aumentando il numero dei servizi offerti ed ampliando armonicamente la sua struttura. SPS è continuamente alla ricerca di nuove opportunità di business nel settore Oil & Gas e oltre, con particolare interesse al settore delle energie rinnovabili.*



## ENGINEERING

Conceptual, Basic, FEED, Detailed Design and Installation engineering.

## SPECIAL STUDIES

Trawl gears interference, dropped objects, anchor dragging, geo-hazard (seismic, slope stability, soil liquefaction from waves and earthquakes) to assess pipeline integrity.

## SURVEY SERVICES

Geotechnical and geophysical survey specifications, field assistance and supervision.

## PROCUREMENT AND CONSTRUCTION ASSISTANCE

Preparation of ITT packages, bid evaluation for material procurement and installation contracts, follow-up services during fabrication and construction activities.

## PROJECT MANAGEMENT

Management Services in support or on behalf of the Client for design, studies, surveys and IMR programs, as well as assistance with procurement and construction activities performed by others.

### INGEGNERIA

Concettuale, di base, FEED, di dettaglio e installazione.

### STUDI SPECIALI

Interferenze con divergenti da pesca a strascico, caduta di oggetti, aratura di ancore, rischi geologici (da sisma, stabilità dei pendii, liquefazione del suolo da sisma e da onde) per garantire l'integrità della condotta.

### ASSISTENZA ALLE SURVEYS

Preparazione specifiche e assistenza/supervisione all'esecuzione di indagini geofisiche, geotecniche ed ispettive.

### ASSISTENZA ALL'ACQUISTO ED ALLA COSTRUZIONE

Preparazione dei pacchetti necessari all'acquisto di materiali ed all'appalto della costruzione, valutazione ed allineamento delle offerte, assistenza durante le fasi di fabbricazione ed installazione.

### PROJECT MANAGEMENT

Servizi di management a sostegno o per conto del Cliente per progetti, studi particolari, singole ispezioni o programmi integrati di Ispezione/Manutenzione/Riparazione di condotte. Assistenza per attività di acquisto materiali e di costruzione realizzate da terze parti.

# OUR SERVICES

# EXPERTISE AREAS

## OFFSHORE PIPELINES



## SUBSEA SYSTEMS



## FLOATING SYSTEMS



## INSPECTION MAINTENANCE AND REPAIR (IMR)



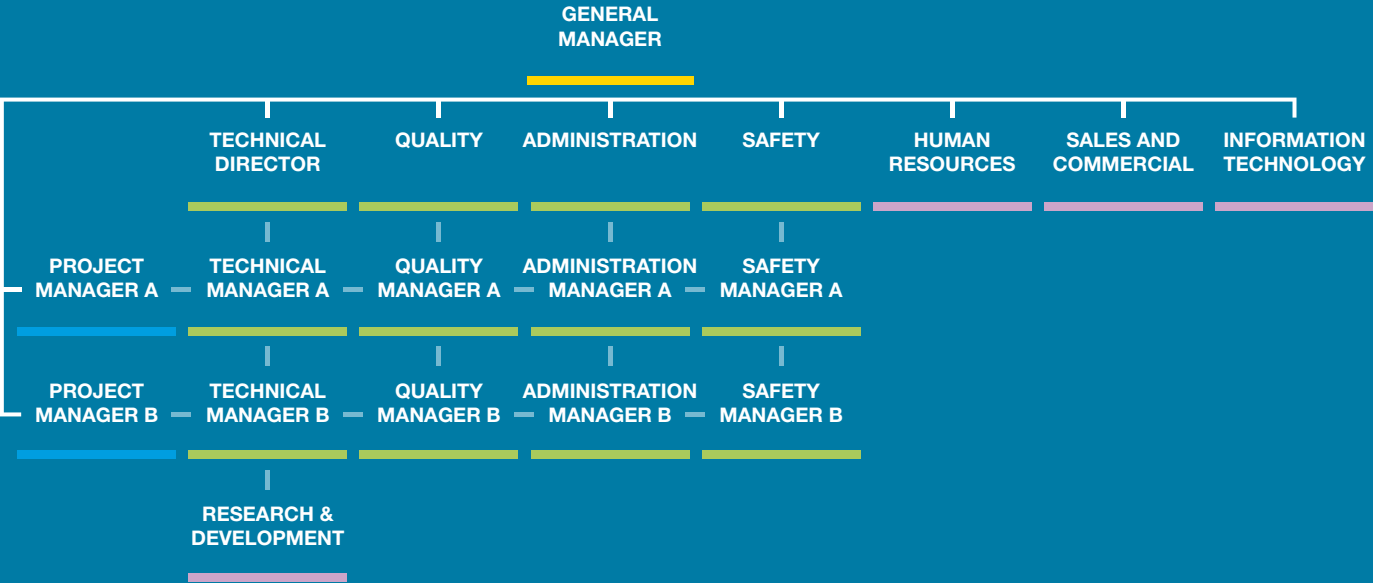
## ONSHORE PIPELINES



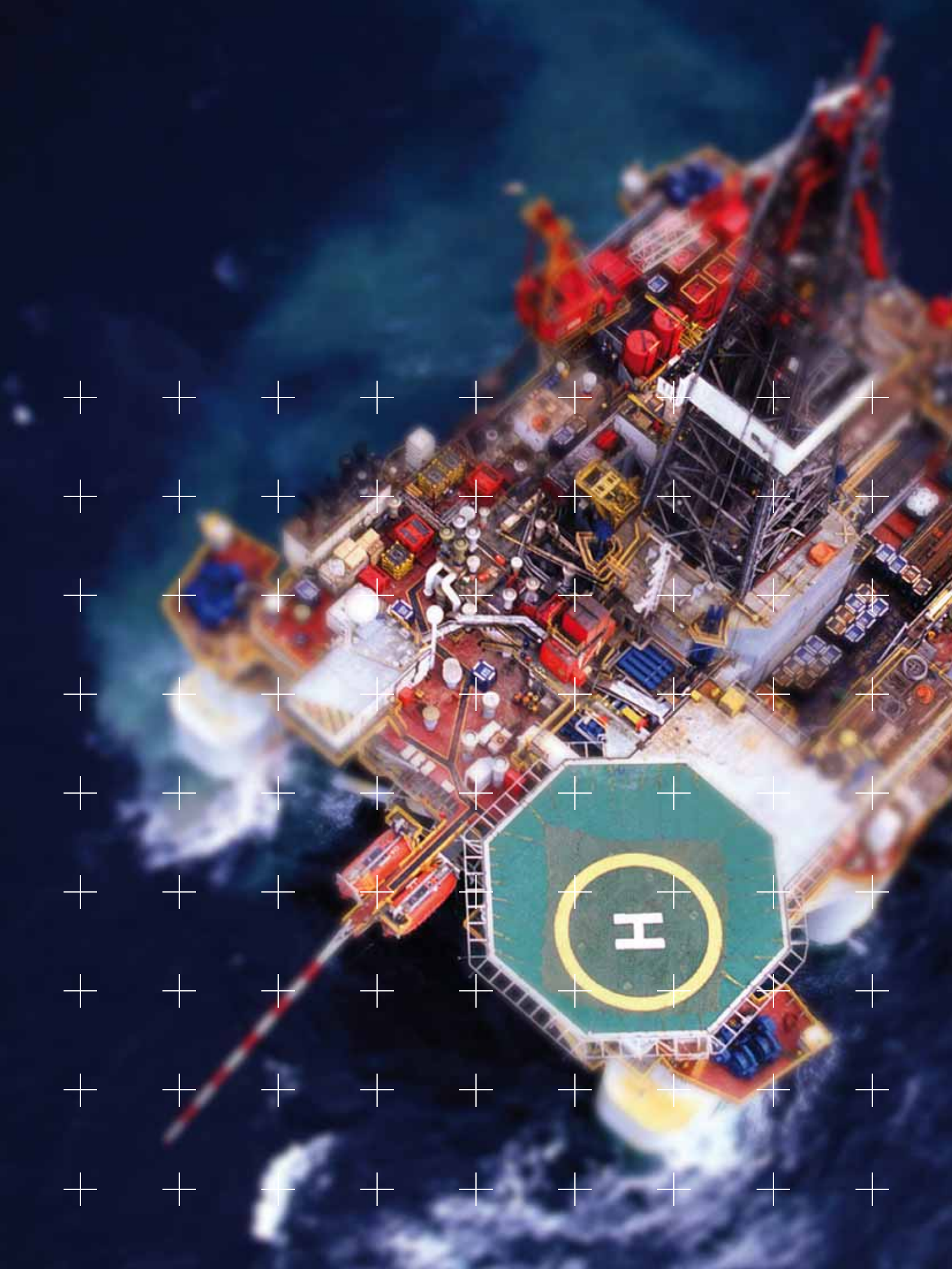


SPS adopts a matrix structure to manage its Projects. Matrix management is a multiple command and control structure commonly used in modern project management, in which an individual has two reporting superiors, one functional (Technical Director) and one operational (Project Manager). This allows SPS to be extremely flexible, gaining the advantages of efficiency and resources specialization at the same time.

*Per gestire i suoi progetti SPS utilizza una struttura a Matrice. L'organizzazione a Matrice è una struttura comunemente utilizzata nel moderno project management, regolata da un sistema di comando multiplo in cui un individuo fa riferimento a due superiori, uno funzionale (es. direttore tecnico) e uno di progetto (es. project manager): ciò consente a SPS di essere estremamente flessibile, ottenendo simultaneamente i vantaggi dell'efficienza e della specializzazione delle risorse.*



# ORGANIZATION CHART



# QUALITY MANAGEMENT

SPS operates within an **ISO 9001:2015** compliant quality environment. The Quality Management System has successfully passed regularly scheduled audits since 2007.

The achievement and maintenance of process and product quality in a project requires a systemic approach.

SPS has fully embraced the ISO 9001 philosophy, based on:

- + Process approach to management
- + Focus on Customer's needs
- + Continuous improvement

*SPS opera all'interno di un ambiente di qualità ISO 9001:2015.*

*Il Sistema di Gestione Qualità è stato certificato con successo dal 2007 ad oggi.*

*Nell'ambito di un progetto, il raggiungimento e il mantenimento della qualità di processo e di prodotto richiedono un approccio sistemico. Per questo motivo SPS ha sposato la filosofia ISO 9001, basata su:*

- + *Gestione aziendale incentrata sull'approccio per processi*
- + *Focus sulle esigenze del Cliente*
- + *Miglioramento continuo*





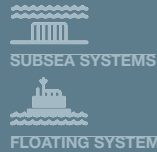
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**SPS** is an Italian independent engineering company based in Fano, one of the main European centers of Offshore and Pipeline Engineering. SPS provides highly qualified engineering support to contractors enabling them to supply comprehensive, reliable and competitive services to Oil & Gas companies.

## OFFSHORE PIPELINES EXPERTISE

The engineering design of offshore pipelines, flow lines and risers represents SPS's core business. Thirty years of Offshore experience allow SPS Engineers to face engineering challenges like deep ocean pipeline design, critical sea beds, landfalls, severe operating conditions and more.

## KEY CAPABILITIES

### Engineering

SPS supplies a full range of services covering the entire project life span, from the earliest conceptual studies to decommissioning and abandonment, passing through cost estimate, time schedules, basic, FEED, detailed design and installation engineering.

### Special studies

SPS can provide analyses concerning trawl gears interference, dropped objects, anchor dragging, geo-hazard (seismic, slope stability, soil liquefaction from waves and earthquakes) to assess pipeline integrity.

### Survey services

SPS can also provide geotechnical/geophysical survey specifications and field assistance/supervision during execution.

### Procurement and Construction assistance

In addition to the preparation of full ITT packages and bid evaluation for material procurement and installation contracts, SPS can provide follow-up services consisting of assistance/supervision during fabrication and construction activities, both from SPS's home office and on site.

### Project Management

SPS has the capability of performing Management Services, for small and medium size projects in support or on behalf of the Client. In particular, SPS can manage design, studies, surveys and Inspection/Maintenance/Repair programs, as well as provide assistance to procurement and construction activities performed by others.





# BOURI GAS UTILIZATION PROJECT

## detailed design of offshore pipelines

### PROJECT DESCRIPTION

The Bouri Gas Utilization Project foresees three offshore pipelines connecting three platforms in the Buori field located offshore Libya, 120 km northwest of Tripoli.

### PROJECT DATA

<b>Outside Diameter</b>	14 "	10 "	4 "
<b>Line Pipe Material</b>	Clad/Lined	C.S.	C.S.
<b>Pipeline Length</b>	7.5 km	19 km	19 km
<b>Max Water Depth</b>	170 m	190 m	190 m
<b>Design Temperature</b>	70 °C	60 °C	50 °C
<b>Design Pressure</b>	22.5 barg	119 barg	79 barg



### SCOPE OF WORK

Detailed Design, assistance in Contract Awarding and Procurement/Construction Follow-up of the system composed of three offshore pipelines transporting raw gas (clad and lined pipes), dry gas and condensate.

The SOW includes the complete design (process excluded) of the offshore pipelines, expansion loops, retrofit risers and relevant support flanges and clamps, as well as the routing, installation, trenching and protection of two Fibre Optic Cables and six Umbilicals connecting the platforms to four SSIVs.

### SUMMARY OF ACTIVITIES

- Endorsement of FEED and COMPANY supplied documentation
- Detailed Design
- Preparation of full ITT package for Installation Contractor
- Technical Evaluation of the BIDS for the Offshore Pipelines System Installation
- Preparation of material Supply Packages
- Technical Evaluation of the BIDS for Material Supply Packages
- Follow-Up of Materials Supply
- Follow-Up of Construction and Installation Operations and Pre-commissioning

### CLIENT



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OFFSHORE PIPELINES



SUBSEA SYSTEMS



FLOATING SYSTEMS



ONSHORE PIPELINES



IMR

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## INSPECTION MAINTENANCE AND REPAIR (IMR) EXPERTISE

A good Inspection Maintenance and Repair program is the key to an efficient pipeline.

With its extensive experience and in-house software, SPS has all the necessary tools and capabilities to assist the client with a fit for purposes program, field activities and reporting in order to avoid/minimise any possible threat to the pipeline.

## KEY CAPABILITIES

### IMR program

SPS provides the client with an IMR program based on detailed design and as built survey data. All the collected data are stored and linked together in a database in order to identify and focus the IMR inspection on the potential criticalities arising during the design and installation phases.

### Survey Bid package

According to the IMR program, SPS provides the client with a full bid package that includes specifications and contracts for external and internal inspections

### Bid evaluation

Guided by the technical specifications, SPS assists the client during the contract awarding phase. Tenders are evaluated from a technical point of view with the results reported in a clear and comprehensible manner to the client.

### Field supervision

SPS provides field supervision and real time verification of the consistency of gathered data, ensuring a quick response in case of a contingency.

### Engineering Evaluation

Based on the data collected during previous surveys (database), SPS performs an engineering evaluation/analysis of the current pipeline status, identifying possible criticalities and hazards.

### Remedial works design

SPS carries out thorough analyses investigating the need for intervention works/repair and, if necessary, performs the relevant detailed design to restore the required pipeline integrity level.

### Reporting

Upon the completion of these activities, SPS provides the client with a complete set of reports that include the results of analyses performed, recommendations for future inspections, and design of remedial works to be carried out.





# EMG GAS PIPELINE INTEGRITY ASSESSMENT

inspection maintenance and repair of gas sealines

## PROJECT DESCRIPTION

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Dry gas offshore pipeline in the South Mediterranean Sea.

## PROJECT DATA

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Outside Diameter	26 "
Pipeline Length	85 km
Max Water Depth	190 m
Design Temperature	70 °C
Design Pressure	120 bar

## SCOPE OF WORK

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Contract for Inspection, Maintenance and Repair for a duration of 15 years of a gas offshore pipeline in the South Mediterranean Sea. The Scope of Work includes shore approach and onshore surveys, offshore survey, internal survey with "intelligent pigs", preparation of the Survey Bid Packages and design of remedial works when required.

## SUMMARY OF ACTIVITIES

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- Preparation of Bid Package for the offshore surveys
- Preparation of Bid Package for the onshore and shore approach surveys
- Technical bids evaluation
- Assistance of the client in commercial negotiations
- Field supervision and survey data approval
- Pipeline status assessment
- Assessment of any need for remedial works
- Reporting of results and conclusions.

## CLIENT

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## SUBSEA SYSTEMS EXPERTISE

One of the factors contributing to SPS's success in the offshore sector is the capability of providing an integrated service package, including subsea systems, offshore pipelines and flowlines design.

SPS can design any type of subsea facility (in-line Tees, SSIV, PLEM, Templates, Manifolds, PLET, etc), including foundations, protection covers, piping and power/control systems.

## KEY CAPABILITIES

### Engineering

SPS offers a full range of engineering services, from the earliest conceptual studies to basic, FEED, detailed design and installation engineering. The design covers a wide range of water depths, from shallow to deep water taking into account diver and/or diver-less connection, as appropriate.

### Survey services

SPS can also provide survey specifications and field assistance/supervision during execution.

### Procurement and Construction assistance

SPS provides follow-up services during procurement, fabrication and installation of subsea structures that includes valves, TUTU, SUTU, umbilical, control panels, power and fibre optic cables, and their installation.





## HEWETT AND IBLEO PROJECTS

feed of offshore pipelines and subsea systems

### PROJECTS DESCRIPTION

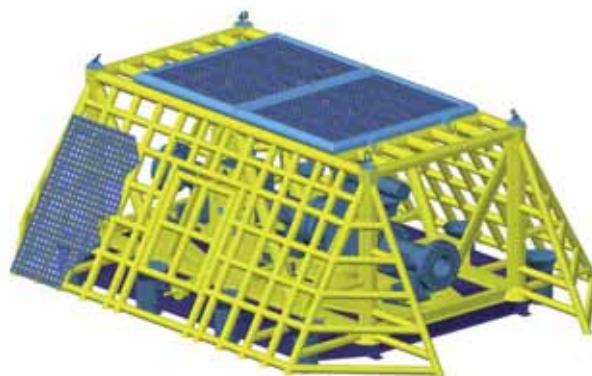
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#### Hewett Project Description

FEED of a pipeline system composed of 32" gas pipelines and 4" MEG lines linking the offshore Hewett gas field to an onshore gas grid. The system also comprises four SSIVs.

#### Ibleo Project Description

FEED of a complex system composed of several offshore pipelines, flow lines and subsea structures on an irregular seabed at water depths up to 620m.



SUBSEA STRUCTURES	WATER DEPTHS
n°1 X-Mas Tree	620 m
n°1 PLET	580 m
n° 2 PLEM	30-580 m
n°1 IN-LINE UTA	540 m
n°1 MANIFOLD	540 m
n°2 SSIV 10"	45 m
n°4 SSIVs 32"	40 m

### SUMMARY OF ACTIVITIES

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Partial or complete design of several subsea structures, including:

- structure
- piping, including valves and actuators
- foundation
- protection cover
- lifting analysis
- control system
- MTO and materials specification

### CLIENT

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OFFSHORE PIPELINES



SUBSEA SYSTEMS



ONSHORE PIPELINES



IMR



FLOATING SYSTEMS

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## FLOATING SYSTEMS EXPERTISE

SPS is highly skilled in installation engineering and design verification of floating systems, as CALM buoys with either Chinese lantern or twin lazy-wave hose configuration, STL buoys, flexible risers, umbilicals.

## KEY CAPABILITIES

### Engineering services

SPS provides solutions ranging from conceptual evaluation to ongoing engineering support.

Static and dynamic analysis are performed supported by deep knowledge of hydrodynamics and structural engineering.

SPS state-of-the-art engineering includes extensive knowledge of OrcaFlex software.

### Survey services

SPS provides specifications and field assistance/supervision for execution of geotechnical and geophysical surveys.



# SUBMERGED TURRET LOADING SUBSEA SYSTEM

installation engineering of flexible riser and umbilical

## PROJECT DESCRIPTION

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Located in the Mediterranean Sea, the STL (Submerged Turret Loading) Subsea System consists of the turret buoy, connected to the PLEM through a flexible riser and an umbilical. The two lines transport dry gas, hydraulic fluid, power, and signals.

## PROJECT DATA

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Line	14" Multilayer Flexible Riser	100 mm PE Umbilical
N° of Buoyancy Modules	14	24
Max Water Depth	73 m	73 m
Minimum Bending Radius	5.2 m	1.5 m

## SCOPE OF WORK

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SOW includes verification of the installation procedure of the lines through adequate static and dynamic analysis.

The system includes the STL buoy, relevant mooring lines and anchors, two gravity bases, the PLEM and the two lines and their attachments (bend stiffeners, clamps, end-fittings, and pull-heads).

The required laying parameters are evaluated and optimised, in order to ensure the structural integrity of the system and carrying out the operations safely.

## SUMMARY OF ACTIVITIES

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- Collection of data (environmental, vessel, system properties)
- Development of the FEM model
- Static Analysis
- Verification of equipment suitability
- Dynamic Analysis
- Verification and optimisation of the geometrical configuration and relevant structural integrity
- Evaluation of the limiting sea states
- Production of relevant drawings
- Provision of support service during activities

## CLIENT

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