



ENGINEERING FOR  
A SAFER WORLD

**SINCE 1982**



**VELOSI  
INTEGRITY & SAFETY  
PAKISTAN (PVT.) LTD.**

**COMPANY PROFILE**



[www.velosiaims.com](http://www.velosiaims.com)

# ENGINEERING FOR A SAFER WORLD



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# Welcome to **Velosi**



Velosi is a leading global consulting firm that provides Asset Integrity Management, HSE, Engineering Services and Software Solutions to clients in the energy industry around the world.

We offer a full range of specialist engineering consultancy services, incorporating our own proprietary software that is exclusively developed and tailor-made to match the needs of our increasingly diverse clients around the world in the energy sector.

Being a leading service provider, we are always proactive and keen to listen to the voice of our customers in order to fully understand their needs.

Within the Velosi Asset Integrity, HSE and Engineering Services, our greatest asset is our qualified and experienced employees who are experts in all engineering disciplines, multi-tasking, highly motivated and ready to serve our clients and the community we live in.

Our main business goal is to help our clients implement effective asset integrity strategies to manage the integrity of their assets by maximizing efficiency, significantly reducing operating costs, and providing the best total lifecycle cost of ownership.

**We look forward to working with you!** ”

**Mr. Ijaz Ul Karim Rao**  
Director

# Beyond **Tomorrow**

## **The oil and gas industry in the world is currently undergoing its most dramatic shifts.**

Like many other industries in the energy sector, the oil and gas industry is currently undergoing a paradigm shift. Factors like price volatilities across the oil market, geopolitical uncertainties, technological advances, mergers and acquisitions, and reporting and regulatory changes are redefining the landscape of oil and gas industry.

These fundamental changes reformulate how the oil and gas industry will move beyond tomorrow into the next decade of the 21st century and what is sustainable in energy production. We are also concerned about the fact that competition for fast-depleting natural resources is reaching new heights, which will adversely affect the communities we serve.

**We are working with  
you to build a business that is safe,  
profitable and sustainable.**

Even though it is not possible to predict the future,  
it is possible to make practical decisions on controlling  
quality and cost, with a partner like Velosi.

While some of the challenges are new to Velosi,  
our focus has always been

**"ENGINEERING FOR A  
SAFER WORLD"**



## Our **Vision**

To provide high-quality Inspections, Certifications, Testing, Asset Integrity, HSE and Engineering Services

## Our **Mission**

To create value for our clients by providing tailored asset integrity engineering solutions to complex problems

## About **Velosi**

Velosi is a global leader in providing a broad spectrum of end-to-end Consultancy Services in the fields of Third Party Inspection (TPI), Vendor Inspection, Statuary Inspection, Certification, Testing, Asset Integrity Management, HSE, Engineering Services, Manpower Services and Software Solutions to clients in the FMCG, pharmaceutical, energy, mining, and oil and gas industries around the world.

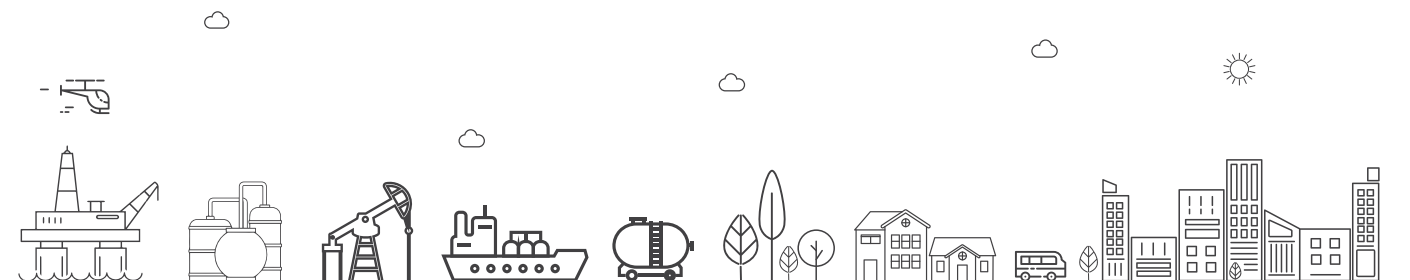
With almost four decades of progressive experience, Velosi has gained a solid reputation as a pioneer in the Management Consulting arena. Founded in 1982 and headquartered in Abu Dhabi, the UAE, Velosi commenced operations in Karachi in 2009 under the name VISP (Velosi Integrity and Safety Pakistan) and later established offices in Islamabad, Lahore and Multan.

**39+**  
YEARS OF  
EXPERIENCE

**86+**  
COUNTRIES  
WORLDWIDE

**390+**  
SATISFIED  
CLIENTS

**800+**  
PROJECTS  
COMPLETED



# Company

## Experience & Capabilities

Being a leading service provider, we are always proactive and keen to listen to the voice of our customers in order to fully understand their needs.

By integrating global coverage and local knowledge with our broad range of services, we are able to design custom-fit solutions to complicated issues. Our extensive range of inter-related services and modular methodologies ensures that we can accommodate a large spectrum of projects.

Our unique way of approaching problems comes from the efforts we have taken to date to reach global goals while meeting local needs. Velosi achieves this uniqueness by delivering the type of services that is superior to its competitors and having the opportunity to associate with the world's major established and emerging markets.

## We are **Accredited & Certified**

Below-mentioned are the accreditations and certifications that Velosi acquired through four decades of experience in the energy sector.



# Partnering with **The World's Top Companies**

Since 1982, we have successfully executed more than 600 prestigious projects awarded by some of the leading multinational companies in the energy sector. We are working with some of the world's largest energy companies, including ADNOC, Dragon Oil, Saudi Aramco, LUKOIL, QAFCO, PETRONAS, TANAP, Sonatrach, PPL, SNGPL, Dolphin Energy, KPOC, OCEP, QP, KOC, ORPIC, REPSOL, BP, Groupement Berkine, Groupement Reggane (GRN), BAPCO, KJO, Petro Energy, Al-Asab and CPP, among many others, who regard Velosi as a one-stop-center for Asset Integrity Management, HSE, Engineering and Software Solutions.

## Building **Long Term Client Relations**

Our existing, satisfied client base speaks for itself and is a testimonial of the confidence our clients have in us. Demand-driven by new exciting projects and concerns over safety and environmental quality, Velosi remains the number one choice for all the prominent energy companies in the world.

## Global Reach, **Local Service**

Through its associated offices worldwide, Velosi operates globally in 38 countries, spanning the Middle East, Africa, Europe, the Americas, Oceania and Asia. Our corporate office is located in the Chanel Islands, the UK.

From anywhere in the world, you can easily access our network to receive exceptional engineering consultancy service from local staff with local knowledge, making it easier for organizations who are trying to manage operations in remote areas.





# Our **Services**



## **Third-Party Inspection (TPI)**

- Project Quality Management System
  - QC Surveillance
  - Vendor Inspection/Surveillance & Expediting Services
  - Pipe Mill Surveillance and Steel Mill Inspection
  - Plant Condition Based Maintenance Monitoring (CBM)
- 



## **Industrial In-Service Inspection**

- Pressure Vessel In-Service Inspections
  - Pipeline In-Service Inspections
  - Storage Tank In-Service Inspections
  - Corrosion Under Insulation (CUI)
  - Evaluation and Monitoring of Cathodic Protection (CP) System
- 



## **Non-Destructive Testing (NDT) and Corrosion Monitoring**

- Conventional Non-Destructive Testing
  - Advanced Non-Destructive Testing
  - Remote Visual Inspection (RVI)
- 



## **Statutory Inspection and Certification Services**

- Tank Lorry Inspection as per OGRA Rules
- CNG Station Inspection as per OGRA Rules
- LPG Plant & Cylinder Inspection as per OGRA Rules



## **Lifting Equipment Inspection, Testing and Certification**

Mobile Cranes and Overhead Cranes Inspection as per LEEA  
Chain Blocks and Slings Inspection  
Forklifts and Racks Inspection  
CAT - V inspection for Mobile Cranes  
Elevators and Escalators Inspection

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## **Testing/Analysis/Calibration**

Testing and Calibration of:

- High and Low-Pressure Equipment
  - Electrical Instruments
  - Temperature Equipment
  - Force and Torque Equipment
  - Dimensional Equipment
  - Miscellaneous Equipment
  - Weighing Bridges
  - Storage Tanks Approved by API Methods
- 



## **Technical Training**

Mobius Institute Vibration Analysis CAT II and CAT III  
NDT Level I and Level II Training  
Riggers Training  
Crane Operator Certifications and Training  
Fork Lifter Operators Certifications and Training  
Training on IMS (Integrated Management System)

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## **Asset Integrity Management Services**

Risk Based Inspection (RBI)  
Pipeline Integrity Management System (PIMS-Onshore & Offshore)  
Structural Integrity Management System (SIMS)  
Safety Integrity Level (SIL)  
Reliability Centered Maintenance (RCM)  
Reliability, Availability and Maintainability (RAM)  
Wellhead Integrity Management System (WHIMS)

## Health, Safety and Environmental (HSE) Consultancy Services



Process Safety & Risk Studies

- Workshop Facilitation
- Risk Assessment
- COMAH/Safety Case
- Health Safety and Environmental Critical Equipment Systems (HSECES)
- Drilling HSE Consultancy Services

Environmental Studies

Occupational Health Risk Assessment (OHRA)

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## Engineering Services



Conceptual Design, FEED and Detailed Design

Operating Manuals & Procedures

Engineering Consultancy Services

Design Verification & Appraisal

Fitness For Service (FFS)

As-Built Drafting Services

Project Management Consultancy Services

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## Pipeline Integrity Services



Pipeline Construction Quality Services

External Corrosion Direct Assessment (ECDA)

Guided Wave Pipeline Screening

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## Software Solutions



VAIL-Plant (Asset Integrity Management System)

VAIL-PHA (Process Hazard Analysis)

VAIL-PSRA (Petrol Station Risk Assessment)

VAIL-MTS (Material Tracking System)

VAIL-ERP (Enterprise Resource Planning)

VAIL-CTR (Cost, Time & Resources Management)

VAIL-CRM (Customer Relationship Management)

VAIL-HRMS (Human Resource Management System)

VAIL-Flow (Workflow Management)

VAIL-ORP (Online Reporting Portal)

VAIL-Feedback

## Audits and Assessments



OHSAS Safety Audits  
Technical Audits  
Environmental Audits  
Process Safety Management (PSM) Audits  
Structural Audits  
Firefighting System Adequacy Audits  
Regulatory Compliance Audits  
Flammable Storage Facility Audits  
Electrical Audits

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## ISO Certification and Training Services



ISO 9001 - Quality Management System  
ISO 14001- Environmental Management System  
OHSAS 18001 - Occupational Health and Safety Management Systems  
ISO 45001 - Occupational Health and Safety Management Systems  
ISO 22000 - Food Safety Management System  
HACCP - Hazard Analysis & Critical Control Points  
ISO 20000 - Information Technology – Services Management System  
ISO 27001 - Information Security Management System  
ISO 50001 - Energy Management System  
ISO 13485 - QMS – Medical Devices Quality Management Systems

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## Data Management and Analytics



Data Management  
Business Intelligence/Analytics  
Data Governance  
Enterprise Data Management

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## Some of Our Latest Equipment



Eddyfi Lyft (Corrosion Under Insulation)  
Teletest Focus+ (Long Range UT/ Guided Wave)  
Olympus XRF Analyzer (Positive Material Identification)  
Floormap3DiM-R (Magnetic Flux Leakage Tank Bottom Inspection)  
Olympus 38DL Plus & GE DMS (Ultrasonic Thickness Measurement)  
Elektro Physik MiniTest 745 (Coating Thickness Measurement)  
Eddify V750 Vacuum Box (Tank Weld Inspection)  
Nikon XF1" (Storage Tank Survey and Calibration Solutions)



## Third-Party Inspection (TPIs)

A Third Party Inspection (TPI) is the impartial and independent inspection services offered by a qualified third-party organization. Velosi provides its worldwide clients with outstanding Third-party Inspection services to ensure quality and compliance with international standards and best practices. Our TPI services have all the necessary regulatory approvals and registrations from various internationally recognized entities.

We offer a complete range of competent and cost-effective TPI services for different industrial segments, comprising civil projects, refineries, pipelines, tanks and petrochemical plants, during the construction as well as the operational phases.

### Our Third-party Inspection services comprise the below aspects:

- Inspection
- Testing
- Verification
- Certification



### Project Quality Management System

Quality Management System is the organizational framework that offers structure to the policies, processes, procedures and resources to enforce the quality management plan. It is one of the key aspects of managing a company as it serves as the basis that affects the ability of the company to meet the specific requirements of the customer.

Velosi's Project Quality Management System incorporates quality assurance and quality control services for providing a total solution to efficiently manage the work of the nominated EPC (Engineering, Procurement and Construction) contractor during the engineering design, procurement and construction stages of a project.



## QC Surveillance

Quality Surveillance is an ongoing monitoring process of all phases of production processes that is planned and scheduled in a spectacular manner without obstructing the product delivery. It is implemented on the basis of the performance and risk in order to maintain the efficiency and quality of the processes.

Velosi's accreditation for approval of procedures encompasses all kinds of permanent jointing to ASME (Boiler and Pressure Vessel Code), API (American Petroleum Institute), and AWS (American Welding Society) and EN Standards.

We also offer approval for other codes and processes such as brazing and different joining methods for plastics, including solvent welding. At Velosi, the overall QC Surveillance process involves:

- Qualification, review and approval of welding procedures.
- On-site inspection of the test piece production across written procedures.
- Witnessing laboratory testing of the test coupons.
- Analysis of any non-toxic or other test results.



## Vendor Inspection/QC Surveillance and Expediting Services

Vendor Inspection, QC Surveillance and Expediting Services are integral parts of a project's purchasing activities. These inspections are usually performed on new build instrumentation, mechanical, electrical and rotating equipment purchased by clients operating in the oil and gas, mining, petrochemical, power and pharmaceutical sectors.

Velosi provides a complete range of Vendor Inspection, QC Surveillance and Expediting Services - for both new construction and ongoing maintenance - that ensure the purchased equipment reaches exactly on time and meet the exact specification, reducing the financial risk of the damaged equipment.

Our Vendor Inspection and Surveillance Services comprise the following components:

- Engineering inspection of mechanical and electrical equipment.
- Absolute quality control of plate and tubular steel mills.
- Pre-shipment inspection for a letter of credit purposes.
- Technical capability audits.



## Pipe Mill Surveillance and Steel Mill Inspection

Pipe Mill Surveillance and Steel Mill Inspection is a type of procedure implemented on any tubular product and at any pipe mill shop to ensure that the material needed is available in compliance with the relevant specification and standard.

Velosi's expert inspection team, spanning across the globe, keeps extensive knowledge throughout the manufacturing processes by using the membership of societies like the American Petroleum Institute (API). We also offer our clients an option of choosing from a full inspection team to random surveillance professional, depends on the specific requirements of the project.

Our Mill Inspection Services cover the below elements:

- Line pipe
- Steel production
- Oil Country Tubular Goods (OCTG) that include drill pipe and specialized casings



## Plant Condition Based Maintenance Monitoring (CBM)

Condition-based Maintenance (CBM) is a systematic approach to monitor the definite condition of an asset to determine what type of maintenance needs to be implemented. CBM imposes that maintenance should only be carried out when particular indexes show signs of declining performance or forthcoming potential failure in a project.

A potential failure is a detectable condition that signifies the likelihood of a breakdown. Integration of condition monitoring is critical in developing a dynamic, condition-based maintenance strategy or predictive maintenance method for equipment and machinery used in industrial applications. Condition monitoring begins with the application of permanently installed sensors or handheld equipment to gather data which can be used to analyze changes in the performance or condition of a machine component while in operation.

At Velosi, data collection for condition monitoring is done single-handedly or in collaboration with the below-mentioned procedures:

- Vibration Analysis
- Thermography Survey
- Oil Analysis
- Acoustic Emission Monitoring
- Ultrasound Airborne Testing
- Eddy Current Testing
- Ultrasonic Testing
- Visual and Optical Testing
- Wear Debris Analysis
- Motor Current Signature Analysis
- Corrosion Monitoring
- Temperature Monitoring

**Condition Based Monitoring can be done by each or in collaboration of the below mentioned analysis and surveys:**

<b>Vibration Analysis</b>	We use this process for monitoring the patterns and levels of vibration signals within a piece of machinery, component or structure to identify unusual vibration events so as to assess the overall condition of the test object.
<b>Thermography Survey</b>	It is a visual investigation, performed by a certified engineer, to identify unusually high temperatures inside an electrical installation.
<b>Oil Analysis</b>	Our experts apply this periodic activity to examine oil contamination, oil health and machine wear.
<b>Acoustic Emission Monitoring</b>	It is a means to trace physical damage in an object or a material in which a stress field forms due to a degeneration mechanism.
<b>Ultrasound Airborne Testing</b>	We carry out this process for detecting leaks in process gas, steam, vacuum and specifically compressed air systems.
<b>Eddy Current Testing</b>	It is a procedure used in Non-Destructive Testing (NDT) which applies electromagnetic induction for detecting and characterizing surface as well as sub-surface flaws in conductive materials.
<b>Ultrasonic Testing</b>	We apply this Non-Destructive Testing (NDT) strategy that uses sound waves to discover defects in materials and parts.
<b>Visual and Optical Testing</b>	It is one of the methods of Non-Destructive Testing (NDT) to check the surface condition of a component.
<b>Wear Debris Analysis</b>	our experts adopt this common analysis tool to detect which degrading activities are happening within a machine or how is it failed.
<b>Motor Current Signature Analysis</b>	it is a methodology for analyzing & monitoring the trend of powerful energized systems.
<b>Corrosion Monitoring</b>	We employ this practice to evaluate and monitor structures, equipment components, facilities and process units for any sign of corrosion.
<b>Temperature Monitoring</b>	It is a basic technique to detect corrosion, loose connections, wear and other issues linked to the asset's conductors such as bus bar and cables.





## Industrial In-Services Inspection

Routine maintenance is mandatory to efficiently manage assets like refineries, petrochemical plants, oil and gas production facilities, solar farms, wind farms, and power plants. Even a slight component failure can cause unwanted downtime and damages.

Velosi offers unparalleled Industrial In-service Inspection services that consist of performance verification, maintenance, inspections and preventive failure assessment to help our clients augment productivity and meet regulatory requirements, reducing costly downtime.

### **Our Industrial In-Services Inspection services include the below processes:**

- Pressure Vessel In-Service Inspections
- Pipeline In-Service Inspections
- Storage Tank In-Service Inspections
- Corrosion Under Insulation (CUI)
- Evaluation and Monitoring of Cathodic Protection (CP) System



### **Pressure Vessel In-Service Inspections**

All types of pressure vessels represent extreme potential hazard because of the high pressure under which they operate. Even non-lethal gases and liquids including air and water can be dangerous in the event of an accident associated with high-pressure equipment.

Velosi's all-inclusive Pressure Vessel In-Service Inspection programs can help plant operators apply inspections, maintenance, performance verification and preventive failure assessment to improve productivity and mitigate costly downtime.



### **Corrosion Under Insulation (CUI) Inspection**

Corrosion Under Insulation (CUI) is a serious type of localized external corrosion that takes place in carbon and low alloy steel equipment that is insulated. This category of corrosion happens when water is collected in or absorbed by the insulation, causing the equipment or the piping to corrode.

Velosi offers best in class CUI Inspection services for our clients' refineries and process plants where equipment is usually operated at high temperatures in order to identify the presence of moisture within insulated vessels & pipelines.



## Pipeline In-Service Inspections

Piping systems used in petrochemical applications and other similar sectors are subject to constant pressure and crunches under the conditions of normal use and handling. These types of operating conditions can cause leaks or spills that may have various critical impacts on plant operators, including the interruption of regular operations, repair and clean-up charges, and possible fines connected to environmental pollution.

Velosi provides an extensive Pipeline In-Service Inspections program for plant operators to detect potential risks, thereby allowing to ensure continuing operations and increased productivity.



## Storage Tank In-Service Inspections

Storing an abundance of hazardous materials at facilities can present a threat to the public, environment and the surrounding area. Discharge of these perilous substances into the soil may lead to costly decontamination procedures. The influence of weather on the external surfaces and the internal temperature variations of the tank are the two major reasons behind the leakage of storage tanks that contain oil, gas or chemicals.

These types of dangerous situations cause devastating injuries and loss. This is where Velosi's unique Storage Tank In-Service Inspection services come in handy that help our clients conduct periodic inspections to inhibit such hazards from happening



## Evaluation and Monitoring of Cathodic Protection (CP) System

Cathodic protection is a procedure performed as an attempt to protect an object from corrosion through making it a cathode. It is done by applying direct current onto a metal object which is in contact with the electrolytic.

Velosi offers a range of cost-effective Cathodic Protection methods to control the corrosion of various buried and submerged metallic structures. It is one of the effective ways to enhance the life of a structure, ensuring integrity throughout its life cycle.



## Non-Destructive Testing (NDT) and Corrosion Monitoring

Non-Destructive Testing (NDT) and Corrosion Monitoring are key elements of a perfect maintenance system. Without having implemented an appropriate corrosion monitoring and evaluation plan in place, most of the manufacturers risk accidents, unnecessary time delays and high price to fix issues that could have been refrained.

Velosi provides specialized Non-Destructive Testing (NDT) and Corrosion Monitoring services along with Materials Testing and welding services that include Conventional and Advanced Non-Destructive testing as well as Remote Visual Inspection for a different array of industries worldwide. These testing and inspection services also complement other conventional quality assurance and quality control services offered by Velosi.

### **Velosi's Quality Assurance services support:**

- Production processes
- Quality control and regulatory compliance
- New construction, pipelines, plant maintenance and scheduled shutdown inspection



## Conventional Non-Destructive Testing



Velosi offers Conventional Non-Destructive Testing method which is the jumping-off point in appraising the condition of the equipment. It comprises a range of testing methods, involving Ultrasonic Inspection, Magnetic Testing, Dye Penetrant Testing, Eddy Current Testing and Radiographic Testing, most of which depend on either sound or electromagnetic waves to analyze materials.

These types of Non-Destructive Testing methods are now in standard use in industries, such as mining, oil and gas, energy, power generation, aerospace, heavy engineering, and automobiles, among many others. New developments in the NDT system enable the generation of 3D images of failures and have revolutionized these industries.

### Different methods of Conventional Non-Destructive Testing involve:

<b>Ultrasonic Testing</b>	A Non-Destructive Testing (NDT) strategy that uses sound waves to discover defects in materials and parts.
<b>Magnetic Testing</b>	A low-cost inspection strategy used to identify exposed or near-surface damages underneath the surface of ferromagnetic substances.
<b>Dye Penetrant Testing</b>	A process used to detect surface breaking flaws through bleed out of a colored or fluorescent dye from the flaw.
<b>Eddy Current Testing</b>	One of the popular electromagnetic testing processes used in NDT that uses electromagnetic induction for examining and distinguishing surface as well as sub-surface flaws in conductive materials.
<b>Radiographic Testing</b>	The NDT method that uses either x-rays or gamma rays to identify the internal structure of manufactured components detecting any flaws or cracks.

## Advanced Non-Destructive Testing

When conventional Non-Destructive Testing (NDT) methods don't match with the increasing demands on performance, sustainability and project efficiency of facilities, oil and gas plants, pipelines, tanks, boilers, and steel structures, advanced NDT methods come in handy.



### Benefits of Advanced Non-Destructive Testing:

- Improve plant reliability
- Enhance safety
- Extend plant life
- Meet regulatory requirements
- Reduce operational and maintenance costs

Directly linked to the nuclear power industry, these advanced NDT methods complement our traditional quality assurance and quality control services.

### Advanced Non-Destructive Testing incorporates the below methods:

- Corrosion Mapping
- Time of Flight Diffraction (TOFD)
- A & B Scan Enhancement Imaging (ABI Scan)
- Floor Map Imaging
- Electro Magnetic Array Testing (EMA)
- Computed Radiography
- MFL Tank Floor Scanning
- Insulated Component Testing (INCOTEST)
- Phased Array
- Tube Inspection Services
- Electro-Magnetic Acoustic Transducer (EMAT)
- Long Range UT Guided Wave Inspection
- Remote Visual Inspection (RVI)
- Direct Current Voltage Gradient (DCVG)
- Close Interval Potential Survey (CIPS)
- Pipeline Current Mapper
- UT Crawler
- Non-Destructive Testing Pigs

## Remote Visual Inspection (RVI)

Remote Visual Inspection (RVI) is a Non-Destructive Testing method that applies visual aids like remotely operated cameras and robotic crawlers for assessing the integrity of infrastructure and components in places that are too hazardous for direct human interference.

Velosi offers unparalleled Remote Visual Inspection services that enable extensive thermal and visual inspections for asset integrity management and quality assurance. Our unique RVI services incorporate the fastest, smartest and the safest methods.



### Velosi's Remote Visual Inspection Services include:

**Inspections of Confined, Cluttered or Indoor Places** - a special method used to inspect confined and complex places like boilers and storage tanks.

**Remotely Operated Aerial Inspections** - an explicitly developed process to examine hard to reach metal structures like power lines and flare stacks.

**Telescopic Crane for Inspections of Hard to Reach Assets** - a unique process used to analyze hard to reach metal structures, including flare stacks and power lines utilizing telescoping cranes.

**Borescope Inspection** - a type of inspection of internal parts involving the root passes of butt welds in tubing, pipe and other inaccessible areas.

**Piping Welding Inspection** - a special method used to inspect confined and complex places like boilers and storage tanks.

**Turbine Visual Inspection** - an inspection technique that utilizes purpose-built drones to get a close view of potential damages to help decide whether additional inspection or repair is required or not.

**Engine Visual Inspection** - a kind of inspection used in the aeronautical sector to examine the engine mount as well as the vibration isolation mounts and attach points before each flight.



## Statutory Inspection & Certification Services

There is a wide spectrum of standards and regulations that all organization should follow to protect compliance of products, services, equipment and facilities. And, it is the responsibility of each organization to comply with the internal and the external operating standards and procedures to support a safe and sustainable society.

Velosi provides an array of onshore and offshore Statutory Inspection and Certification Services in accordance with statutory and voluntary provisions to ensure that your assets meet all the essential national as well as international quality and performance requirements.

### **Our state-of-the-art Statutory Inspection and Certification Services involve:**

- Tank Lorry Inspection as per OGRA Rules
- CNG Station Inspection as per OGRA Rules
- LPG Plant and Cylinder Inspection as per OGRA Rules





## Lifting Equipment Inspection, Testing and Certification

Wherever you do business, if your organization owns or operates any type of cranes, lifting or hoisting equipment, it is of paramount importance that the equipment is in compliance with all the significant statutory directives and provisions.

Velosi is a pioneer in offering a full suite of Inspection, Testing, Verification and Certification services for all types of crane, hoisting and lifting equipment worldwide. We are one among a few companies in the world that are fully accredited by the United Kingdom Accreditation Service (UKAS) for inspecting and providing certification of lifting equipment. Velosi carries out inspections in accordance with local country statutory regulations like the Lifting Operations and Lifting Equipment Regulations (LOLER) in the UK. All of the expert surveyors at Velosi are qualified LEEA (the Lifting Equipment Engineers Association) engineers.

### Our Lifting Equipment Inspection, Testing and Certification services comprise:

- Mobile Cranes and Overhead Cranes Inspection as per LEEA
- Chain Blocks and Slings Inspection
- Forklifts and Racks Inspection
- CAT - V inspection for Mobile Cranes
- Elevators and Escalators Inspection







## Testing/ Analysis/ Calibration

Calibration is a comparison between a standard measurement and the measurement using a peculiar instrument. Naturally, the accuracy of the standard should be ten times the accuracy of the measuring instrument being tested. Nevertheless, the accuracy ratio of 3:1 is agreeable by most of the standards organizations.

The accuracy of all measuring devices deteriorates over time. This is commonly caused by usual wear and tear. However, changes in accuracy can also be induced by mechanical or electric shock, or a dangerous manufacturing environment.

Velosi provides the best available Testing/Analysis/Calibration services for measuring test equipment to assure that they always perform as expected.

### **Our Testing/ Analysis/ Calibration services comprise:**

- Testing and Calibration of High and low-Pressure Equipment
- Testing and Calibration of Electrical Instruments
- Calibration of:
  - Temperature Equipment
  - Force and Torque Equipment
  - Dimensional Equipment
  - Miscellaneous Equipment
  - Weighing Bridges
  - Storage Tanks by Approved API Methods, such as:
    - Cylindrical Vertical Above Ground Tanks by EODR Method
    - Cylindrical Horizontal Above Ground tank by EODR and Wet Method
    - Cylinder Horizontal Buried Tanks by Wet or Dry Method
    - Rectangular Above Ground Tanks by Dry or EODR Method
    - Road Bowsers by Wet Method



## Technical Training

When work is hazardous and consequences are high, ongoing learning and development is inevitable for the safety of the workers and the effective management of the operation, especially in high-risk industries, such as offshore oil and gas drilling and production, mining, construction, chemicals and nuclear power, and aviation.

An organization's training strategy and curriculum can hugely impact its capability to meet the industry standards and regulations. For any business, training and development are focused on improving the skills and knowledge of its individuals.

Velosi offers world-class Technical Training and Development programs to clients in the public, private and non-profit sectors around the world to improve the skill sets and competence of their employees.

**Our extensive range of Technical Training courses include but not limited to:**



### **Mobius Vibration Analysis and Asset Reliability Practitioner (ARP) Training**

ISO 18436 accredited training courses that enable the candidates to design, establish and manage routine condition monitoring programs; evaluate alarm sets; write work procedures; and to specify vibration acceptance testing procedures.

**Velosi offers Mobius Training for:**

- Mobius Vibration Analysis Category II
- Mobius Vibration Analysis Category III
- Asset Reliability Practitioner (ARP) Category II



### **Training on Integrated Management System (IMS)**

A training program that comprises the fundamentals of integrated management systems. It enables the candidate to help organizations progress towards enhanced profit, effective processes, decreased costs, fewer liabilities and an improved brand image.



## NDT Level I and Level II Training (RT, UT, MT, PT, VT, VA, MFL, IR, AE, LT, PAUT, TOFD)

Non-Destructive testing certifications that incorporate various methods and cover the below-mentioned areas such as:

- Visual Testing (VT)
- Ultrasonic Testing (UT)
- Eddy-Current Testing (ET)
- Liquid Penetrant Testing (PT)
- Magnetic Particle Testing (MT)
- EMI Course (Based on Unit Used)
- Rotary Shoulder Connection (RSC)/ Visual Thread Inspection



## Riggers Training

A theory and practical combined course that consists of the following elements and modules, among many others:

- The role of the rigger element
- Introduction to lifting operations - relevant legislation and management of the hazards
- Rigging and lifting operations element
- The principles of rigging element
- Preparing for the lifting operation element
- Carrying out the lifting operation element
- Restoring the work area and post-operation responsibilities



## Crane Operator Certifications and Training

A certification course that is specifically designed for those who work in crane operations and have experience in operating a crane. It provides new skills and knowledge that improve the candidate's safety and work practices on the job.



## Fork Lifter Operators Certifications and Training

In compliance with all the relevant requirements and standards, this course encompasses topics like forklift driving with training in forklift operation, workplace safety, and daily maintenance best practices.



## Asset Integrity Management Services

Asset Integrity Management Systems (AIMS) is defined as the ability of an asset to perform its necessary functions efficiently and effectively while protecting health, safety and the environment, and the means of guaranteeing that the people, processes, systems and resources that deliver integrity are in place, in use and will perform well when needed over the whole life cycle of the asset.

With almost four decades of progressive and in-depth experience in the oil and gas industry, Velosi is foremost in providing fully-integrated Asset Integrity Management Services (AIMS) that are custom-tailored to ensure the safe and reliable operation of your assets.

Our prudent AIMS programs are designed to assure safety and efficiency, incorporating distinct aspects of equipment design, maintenance, inspection programs, and operational management practices.

Velosi's multidisciplinary panel of safety management experts can effectively audit and optimize the existing safety configurations of your asset to ensure productivity, reliability and security. Asset integrity involves four major processes, including Risk Based Inspection (RBI), Reliability Centered Maintenance (RCM), Safety Integrity Level (SIL) and Reliability, Availability and Maintainability (RAM).



## Risk Based Inspection (RBI)

Risk-based inspection is a type of maintenance business process used to analyze equipment, including pressure vessels, heat exchangers and piping in industrial plants. It is a decision-making technique to optimize inspection plans.

Led by industry experts, including senior consultants and engineers, Velosi's unparalleled Risk-Based Inspection programs feature a total quality assurance approach, resulting in substantial cost savings for the oil and gas industry.

### Benefits of RBI:

- Defines and rates the risk levels of all components
- Identifies the potential to reduce production losses during turnaround inspection
- Increases confidence in equipment integrity & reliability
- Minimizes risk to health, safety and the environment
- Maximizes resource utilization
- Improves operating efficiency



### Deliverables

- Corrosion Loop Drawings
- Inventory Group Drawings
- Corrosion & Inspection Strategy Document
- Risk-based Inspection (RBI) Findings
- Inspection Isometric Drawings for Equipment & piping
- Integrity Operating Window
- Asset Passports

## Pipeline Integrity Management System (PIMS-Onshore & Offshore)

Pipeline Integrity Management System (PIMS) is defined as the compilation of preparatory measures that jointly ensure the integrity of the pipeline. PIMS guarantees the accomplishments of your projects by identifying and reducing the likelihood of hazards and avoiding unnecessary shutdowns.

Velosi offers a consolidated Pipeline Integrity Management System (PIMS), for both onshore and offshore facilities, that boasts a set of features to help our clients conduct the inspection in compliance with international standards, such as API 1160 and ASME B31.8S.

### Benefits of PIMS:

- Monitors the technical and safety condition of the pipeline system.
- Recommends pipeline intervention work and repair when needed.
- Executes RBI to determine the condition of the pipeline.
- Protects the environment.
- Ensures continuous availability of the pipelines for transportation without interruptions.
- Minimizes risks and throughput loss.



### Deliverables

- Section Layout Drawings
- Mechanical Assessment Sheet
- RBI -PIMS Study
- Inspection Plan
- Integrity Operating Window (IOW)
- Asset Passport

## Structural Integrity Management System (SIMS)

Structural Integrity Management System (SIMS) is the method of securing compliance with regulatory as well as organizational requirements over a period of time, ensuring the structure is fit-for-purpose until decommissioning or removal. An effective SIM system is substantially critical in preventing catastrophic failure in complex industrial facilities.

At Velosi, we have endorsed the international codes, such as ISO 19900, ISO 19902, ISO 19904 and API RP 2 SIM, in order for our structural integrity experts to ensure sustainability and integrity of onshore and offshore structures during all the phases of the structure life cycle.

### As a minimum, we cover the following types of structures:

- Offshore Platforms – Subsea Structures
- Offshore Platforms – Topside Structures
- Floating Production Storage and Offloading (FPSO)
- Hull and Flexible Riser
- Onshore Structures

### Benefits of SIMS:

- Ensures the risks associated with the operation of structures are perfectly identified and assessed.
- Assures the structural designs are fit for the intended purpose and engineered to approve standards.
- Reduces risks as low as reasonably practicable.



### Deliverables

- Tag Marked Drawings
- Asset Register
- Inspection Plans
- Asset Passport
- RBI – SIMS Study

## Safety Integrity Level (SIL)

Safety Integrity Level (SIL) is an analysis or measurement of performance required for a Safety Instrumented Function (SIF) to maintain or achieve a safe state. At Velosi, we understand that it is crucial to perform a statistical measurement of how likely a process or a system is to be operational and ready to serve the function for which it is intended, including the calculated time to its likelihood of failure. Our uniquely designed SIL study services comply with global standards - IEC-61508, IEC-61511 and ISA TR 84.00.02 - to ensure the safe and reliable operation of the plant.

### Benefits of SIL:

- Effectively manages safety-critical equipment
- Prevents or mitigates the consequences which can result in mishaps like loss of life, personnel injury, equipment damage or loss of production.



### Deliverables

- SIL Methodology
- SIL Classification Study
- SIL Verification Study
- Safety Requirement Specification (SRS)
- Safety Life Cycle Document

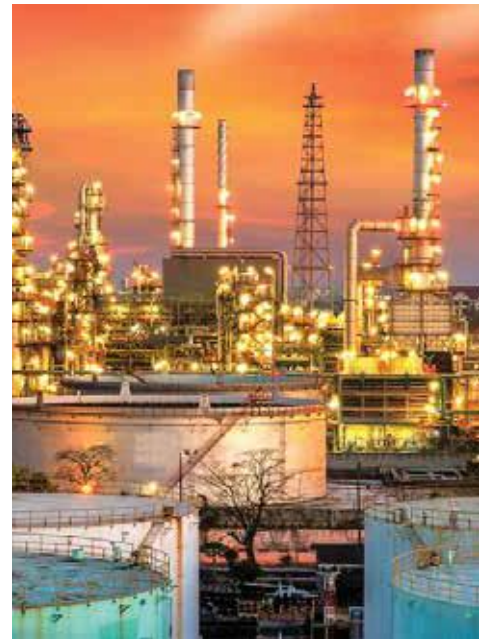
## Reliability Centered Maintenance (RCM)

Reliability Centered Maintenance is a unique corporate-level maintenance methodology that is executed to optimize the maintenance system of an organization or facility. Successful application of RCM can enhance reliability, cost-effectiveness, machine uptime, and a higher understanding of the level of risk that the business is managing.

At Velosi, our RCM specialists apply rigorous and systematic methods in determining the appropriate maintenance tasks to address each of the identified failure modes and their consequences.

### Benefits of RCM:

- Increases the reliability of assets to maximize the Health, Safety and Environmental (HSE) aspects.
- Reduces corrective and overall maintenance costs.
- Avoids production losses due to unexpected failures of critical equipment.



### Deliverables

- Asset Register as per ISO-14224
- FMECA (Failure Mode Effects Criticality Analysis) Study
- Job Plans
- Equipment Criticality Analysis (ECA)
- Preventive Maintenance Plans (PMRs), Task list and identification of spare parts in line with PMRs

## Reliability, Availability and Maintainability (RAM)



Reliability, Maintainability and Availability (RAM) are three critical system features that have considerable influence on the sustainment or total Life Cycle Costs (LCC) of an asset. The ultimate aim of a RAM study is to manage assets which run the system with minimal cost and maximum efficiency.

### Benefits of RAM:

- Refines the downtime management method.
- Recognizes any performance shortfalls.
- Increase efficiency.
- Build successful maintenance plans.



### Deliverables

- Identification potential bottlenecks
- Estimating the on-stream availability of the unit
- Prediction the impact of equipment redundancy and sparing
- Development and mitigation strategies for expected failure modes
- Perform a preliminary equipment criticality analysis
- RAM Study

# Wellhead Integrity Management System (WHIMS)

Wellhead Integrity Management System is an integrated process used to mitigate the risk and cost of intervention in well integrity incidents, using a multidisciplinary approach and real-time intelligence.

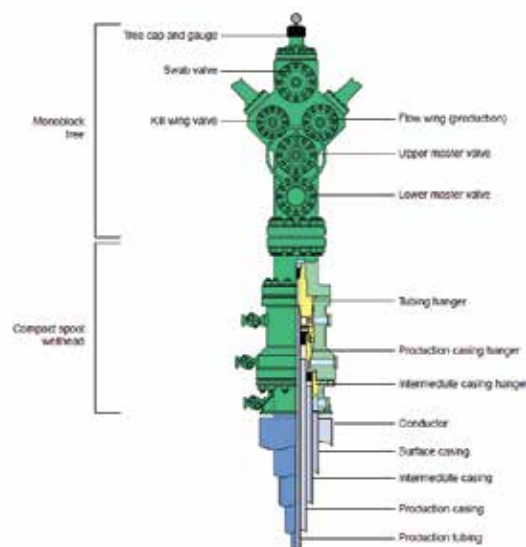
Our well integrity experts apply FMECA-based (Failure Mode Effects and Criticality Analysis) RBI methodology for wellhead integrity assessment and establish the customer methodologies according to industry standards like BS EN 60812, IEC 60812, OREDA, API 6A, API 14B, API 14C, API 7L, API RP 57 and ISOTS - 116530-2 to automate their preventive maintenance activities.

At Velosi, it's our motto to ensure that wells operate as designed for their assigned life with all risks kept as low as reasonably practicable or as mentioned, securing each well's integrity. Hence, we provide exceptional operating standards and guidelines for maintaining the well integrity parameters so that the Return on Investment (ROI) is maximized without sacrificing the safety and environment.



## Benefits of WHIMS:

- Compares different well maintenance alternatives with respect to blowout probabilities.
- Evaluates the blowout risk for specific well equipment.
- Identifies potential barrier problems in specific well types.
- Assesses the effect of various risk reduction methods.
- Analyze potential barrier problems during well interventions/maintenance activities.



## Deliverables

- Formulization of Asset Register
- Identification of applicable damage mechanism / de-gradation mechanism
- Risk Ranking & Calculation of criticality based on calculated POF & COF
- Development of Inspection plan against calculated criticality factors





## Health, Safety and Environmental (HSE) Consultancy Services

Velosi is specialized in delivering various Health, Safety and Environmental (HSE) services for the entire project life cycle, from conceptual design to decommissioning stage, including Engineering, Procurement and Construction (EPC) phase and Operation phase as per the requirements of local regulatory authority, and the clients' standards and procedures. Our HSE services meet all the global regulatory standards with the ultimate goal of mitigating the risk to 'as low as reasonably practical' (ALARP).

We offer a complete spectrum of HSE services ranging from facilitating the risk identification workshops to assessing and quantifying the risk including the process safety hazards, environmental impacts and occupational health hazards, providing the risk mitigation measures.



## Process Safety and Risk Studies

Process Safety is based on best design principles along with detailed and thorough operating as well as maintenance practices. In order to achieve safe processes and operations, we propose a disciplined framework to manage the integrity of operating systems and processes and thereby preventing and controlling events that have the potential to release hazardous materials and energy.

At Velosi, we integrate Process Safety and Risk Studies to define a robust project loss prevention philosophy touching all the subjects on how process safety interacts with other engineering disciplines.

## Workshop Facilitation



Workshop Facilitation is the method of providing objective, unobtrusive guidance to a group of for collaboratively progressing towards a common goal. It is usually conducted to communicate and instruct different project teams on the specific project and industry issues and to cultivate a cooperative culture within the teams.

During workshop facilitation, the role of the facilitator is to plan and lead activities and instruction for helping the group do their best, thinking and working together. Facilitation allows each and every participant to contribute equally and fully, enabling a shared, collective outcome that the group have already defined.

At Velosi, our Health, Safety and Environmental experts are committed to providing ample support to our clients in developing their projects through informative and productive workshops, helping them connect and engage with diverse groups to work towards a common objective.

### Velosi's Common Workshop Facilitation Goals include:

- Equal and Full Participation
- Mutual Understanding
- Collaborative and Inclusive Decision Making
- Shared and Collective Responsibility

### Deliverables

- Hazard Identification (HAZID)
- Hazard and Operability (HAZOP)
- Safety Integrity Level (SIL)
- Simultaneous Operations (SIMOPS)
- Constructability Review
- Bow-Tie
- ALARP Demonstration
- Inherent Safe Design (ISD) Review

## Risk Assessment

Risk Assessment is the process of analyzing potential hazards and identifying sensible measures accurately to control the risks at the workplace. At Velosi, we address human factors in relation to health and safety, aiming to optimize human performance and reduce human failures. We help our clients take a proportionate approach to human factors in risk assessment based on their hazard and risk profile.

A Risk Assessment is a crucial element for health and safety management as it protects the workers and business, complying with the statutory and regulatory standards. It should be carried out following the five below steps:

- Identifying the hazards.
- Deciding who might be harmed and how.
- Assessing the risks and deciding on control measures.
- Recording the findings and implementing them.
- Reviewing the assessment and updating if necessary.



### Deliverables

- Quantitative Risk Assessment (QRA)
- Fire and Explosion Risk Assessment (FERA)
- Building Risk Assessment (BRA)
- Fire and Gas Mapping Study
- Emergency System Survivability Analysis (ESSA)
- Evacuation Escape and Rescue Analysis (EERA)
- Dropped Object Study
- Hazardous Area Classification
- Pollution Prevention and Control (PPC) Compliance Study
- Emergency Response Plan (ERP)
- Air Dispersion Modeling Study
- Project HSE Plan
- Noise Assessment Study
- Waste Management Plan
- H2S Dispersion & Zoning Study
- Human Factor Engineering Assessment Study
- Ergonomics Study
- PHSER Workshops & Study
- Construction HSE Plan

## COMAH/Safety Case

The COMAH (Control of Major Accident Hazards)/Safety Case approach is a systematic procedure for the identification, evaluation and documentation of Major Accident Hazards (MAH) and the risk levels of new projects, existing facilities and operations. It is a facility or operation-specific demonstration of the HSE Management System in action, documenting that risks have been, or will be, reduced to 'acceptable' or 'as low as reasonably practicable' (ALARP).

This will give the project personnel the systematic and identified HSE plan on how to reduce the risk/hazards that will enable them to execute the plan smoothly without sacrificing the manpower and workplace safety.



## Health Safety and Environmental Critical Equipment Systems (HSECES)

Health Safety and Environmental Critical Equipment Systems (HSECES) study is carried out by benchmarking the ongoing activities in a company and highlighting potential exposure and significant HSE risks. The business impact of these risks is studied against threat controls (Barriers), recovery preparedness measures and associated escalation controls.

Our HSE experts offer unparalleled HSECES services to help you analyze and document all the relevant procedures to effectively manage these equipment systems for minimizing their failure risk.



### Benefits of HSECES:

- Evaluates the ongoing activities in an organization, featuring possible exposure and significant HSE risks.
- Protects workers and the environment from a major hazard involving fire, explosion and the release of toxic gases and fumes.
- Ensures effective escape from affected areas of the site, evacuation of the site or transference of people to a place of safety.

### Deliverables

- Identification of HSECES
- HSECES Performance Standards for all Identified HSECES
- ICP Audit for HSECES Verification
- Quality Performance Standards

## Drilling HSE Consultancy Services

Excellence in HSE performance and Safety can only be achieved by applying effective management systems along with best practices and procedures that act on all stages of the life cycle of a production facility. We always ensure that our HSE-related services productively support the management systems implemented at the facility.

At Velosi, we strongly believe that safety can be as simple as thinking about what we do before we do it, looking after each other as we do it, and capturing lessons so that they are not forgotten.



### Benefits of Drilling HSE Consultancy Services:

- Recognizes the importance that onsite equipment is 'Fit for Purpose' and performs as designed.
- Helps you work cooperatively as part of a team with Operators and Drilling Contractors alike.
- Enables to apply sound safety judgment and common sense while evaluating the potential risks.

### Deliverables for Onshore & Offshore Rigs

- HSE Audit, Survey & inspection Study
- Complete Rig Inspection Study
- Rig Acceptance Survey Study
- Rig Condition Survey Study
- Drop Object Survey/Inspection/audit Study
- Safety Case Study
- Working at Height Audit Study
- Rig Move Audit Study
- Noise Survey Study
- Environmental Impact Assessment Study
- Occupational Health Risk Assessment Study

## Environmental Studies

Environmental Studies are an integrative academic field that methodically studies human interaction with the environment. It incorporates better practices and more balanced approaches to reduce the impact on the environment, conserving the natural resources for future generations.

The main purpose of Environmental Studies is to build a world where people are fully aware of and concerned about the issues associated with the environment, & are devoted to working towards creating solutions for current problems and preventing future problems.



### Deliverables

- **Environmental Studies & Assessments**
  - Environmental Impact Assessment (EIA)
  - Strategic Environmental Impact Assessment
  - Preliminary Environmental Review (PER) Study
  - Construction Environmental Management Plan (CEMP)
  - Environmental Management Plan (EMP)
  - Decommissioning Environmental Management Plan (DEMP)
  - Operational Environmental Management Plan (OEMP)
  - Environmental Permit Application (EPA)
  - Environmental Action Plan (EAP)
  - Environmental Audit Report (EAR)
- **Environmental Monitoring & Testing Services**
  - Indoor Air Quality Monitoring
  - Ambient Air Quality Monitoring
  - Particulate Matter Monitoring
  - Noise Level Monitoring
  - Stack Emission Monitoring
  - Light Level Monitoring
  - Formaldehyde Monitoring
  - Site Meteorological Data Monitoring
  - Soil & Water Analysis
- **Waste Management Consultancy**
  - Waste Reduction Report (WRR)
  - Operational Waste Management Plan (OWMP)
  - Decommissioning Waste Management Plan (DWMP)
  - Waste Audit
- **Estidama/Sustainability/Green Building Consultancy**

## Occupational Health Risk Assessment (OHRA)

Occupational Health Risk Assessment (OHRA) is a process to estimate health risks from exposure to different levels of a workplace hazard. Comprehending how much exposure to a potential threat poses health risks to employees is vital in eliminating, controlling, and reducing those risks.

At Velosi, we have a panel of expert occupational health and hygiene specialists with hands-on experience in providing practical assistance and guidance on occupational health risk assessment.

### Occupational Health Risk Assessment encompasses:

- Emergency Management and Planning (EMP)
- Qualitative OHRA
- Quantitative OHRA
- Workplace Exposure Monitoring
- Industrial Hygiene Monitoring Plan



### Deliverables

- Occupational Hazard Identification (OHID)
- Workshop and Study
- OHRA Study
- Noise Survey and Assessment
- Biological Agent Assessment



## Engineering Services

Velosi offers a full range of high-quality, specialized engineering services to clients that span an array of industries. Our specialized team of experts encompasses over 200 multidisciplinary engineering professionals with a wealth of having delivered more than 600 projects around the world.

We help our clients develop and rehabilitate their existing energy assets by providing a wide range of customized engineering services such as Design Verification and Appraisal, Conceptual Design & FEED, Detailed Design, Fitness for Service Assessment and Drafting Services to maximize productivity and efficiency, reducing operational costs as well as risks.

At Velosi, we believe that our vast experience in providing world-class engineering services to our clients around the world enables us to add optimum value to the projects we undertake, resulting in the best possible eventual outcomes.



# Conceptual Design, FEED and Detailed Design

The core requirement of any engineering project is its conceptual design or feasibility study. At this stage, boundaries are defined for further Front End Engineering Design (FEED). In FEED, the major focus lies on the technical requirement along with the estimated budget investment cost of the project. FEED also serves as the base for the bidding of execution phase contracts i.e. Engineering Procurement Construction (EPC) and Engineering Procurement Installation Commissioning (EPIC).

Conceptual Design & FEED are performed in compliance with standards like ASME, API, ACI, ASCE, SHELL DEP, BS, NFPA, and other applicable industry codes and standards.



## Deliverables

### ● Process

- Process Flow Diagrams (PFDs), Utility Flow Diagrams (UFDs) and Heat & Material Balances
- Process Simulation Report Process Design Calculations
- Piping & Instrumentation Diagrams (P&ID's)
- Data Sheets
- Cause & Effects Diagrams
- Process & Operational Control Description
- Flare and Relief System Study/Sizing Calculations
- Pre-commissioning and Commissioning Manual
- Operating & Maintenance Manual

### ● Electrical Design

- Area plans
- Layout drawings
- One line diagrams showing interlocks, inter tripping, system capacity, Voltage levels, currents, impedances, generation power levels etc.
- Schematics
- Equipment drawings with major tagged equipment such as Transformers, Switchgears, MCCs, UPS, Chargers, Generators, Power supplies, PTs, CTs, Control panels, Packaged equipment etc.
- Inter Connection Diagrams
- Lists and Schedules
- Calculations
- Studies and Reports

### ● Civil and Structural Design

- Civil Design Criteria
- Structural Design Criteria
- Civil Layouts
- Structural Drawings
- Underground Services Specification
- Underground Services Layout
- Underground Service Design Details Drawings
- Cable Trench Layouts
- Paving Plan and Details Drawings
- Foundation and Concrete Structure RC Details
- Road Layouts and Details

### ● Instrumentation and Controls

- System Block Diagrams
- Instrument Specifications for Equipment and Materials
- Instrument Index
- Relief and Safety Device Index
- Alarm and Trip Schedule
- Control Room and Control Building Layouts
- Instrument Cable Routing
- Instrument Power and Utility Requirements
- Power Distribution Schedule
- Instrument Junction Box Schedules
- Loop Diagrams
- Input/ Output Schedules

### ● Piping Design

- Overall Site Plot Plan
- Piping Material Specifications
- Heat Tracing/Jacketing Specification and Schedules
- Piping General Arrangement Drawings
- Isometric Drawings
- Material Take-offs
- Key Plans
- Stress Analysis
- Pipe Supports Design details
- Special Pipe Support Register
- Pipe Support Spring Register and Calculations

### ● Firefighting and Safety

- Safety Design Philosophy
- P & ID for Fire Water Ring Main
- Fire Fighting Equipment List / Requisitions
- Fire and Gas Detection Equipment Schedule
- Extinguishing Systems Design (Where/if applicable) of fixed fire extinguishing systems (e.g. foam, carbon dioxide, clean agent, and/or dry powder systems)
- Mobile Fire Fighting Equipment Schedule
- Safety Equipment Schedule

## Engineering Consultancy Services

We have a full range of projects, construction, and commissioning management services for Oil and Gas projects. Working either in our own facilities or in client offices, we have personalized project management teams tailored to suit client practices, procedures, and standards. In particular, we believe that our vast experience can enable us to add the maximum value to our client's projects by ensuring they set off on the right track at the earliest stages leading to the best possible eventual outcomes.



### Deliverables

- Advice and supervision of all project phases from the earliest stages to start-up
- Direct assistance to client in project definition and prefeasibility stages
- Pre-FEED engineering and FEED tender production and bid evaluation
- FEED supervision and review
- Design and EPC tender evaluation, contract preparation and assistance during negotiation with contractors
- Provision of project management teams including project controls and engineering
- Provision of satellite teams to supervise design in contractor offices
- Value management
- Planning, schedule and logistics management
- Risk management
- Construction supervision and management
- QA/QC, Inspection and safety management
- Commissioning, training and handover

## Operating Manuals and Procedures



Operating manuals and procedures are formal written instructions that describe how a particular plant should be operated, the expected performance targets, associated risks, and the key roles and responsibilities of different stakeholders in plant operation in the oil and gas industry.

Being the key elements of plant operation management, operating manuals and procedures enable smooth operation of the plants by enhancing production, reducing downtime and protecting the plants themselves. Operating manuals and procedures are performed in compliance with global standards like ISO 9001: 2015 and OSHA 29 CFR 1910.119.

### Deliverables

- Standard Operating Manuals
- Standard Operating Procedures



## As-Built Drafting Service



After the construction or modification of any facility, all relevant engineering drawings, associated documents, and schedules are required to be updated to As-Built status in order to represent the actual installation. This helps you use the existing space effectively by eliminating the costly changes that might appear because of inaccurate sets of drawings, this can be used as a reference for future maintenance and planning, providing a proper outline of the existing design and offers valuable insights into the property, highlighting design opportunities or constraints on architectural, structural, electrical, mechanical, and site conditions.

Velosi is a pioneer in the region in conducting the Red Line Markup (RLMU) and upgrading the drawings in 2D & 3D through Intelligent Software i.e. AutoCAD, SmartSketch, Smart Plant PandIDs (SPPID), Smart Plant Instrumentation (SPI), Smart Plant Electrical (SPE), PDMS, PDS and SP3D.

### Deliverables

- RLMUs
- Updated Drawings
- Updated Database/Model

## Fitness For Service (FFS)



Fitness for Service (FFS) is considered as the best practice and standard usually employed by the oil and gas industries for determining its condition for continued service. FFS acts as an analytical basis to define flaw acceptance limits and enables the industry experts to differentiate between acceptable and unacceptable flaws and damage in accordance with the industry-recognized and widely accepted good engineering practices.

At Velosi, fitness for service assessments are usually measurable engineering appraisals that are conducted to demonstrate the structural integrity of an in-service component that may comprise a flaw or damage. Our FFS assessments are performed in compliance with international standards such as ASME B31G, BS 7910.

### Deliverables

- Identifies the main damage mechanisms based on the best approach and applicable standards (API 579, BS 7910, and others).
- Provides the current integrity of the asset given a current state of damage and the projected remaining life.
- Allows operating the damaged component safely for a particular period of time.
- Offers mitigation plans to run the equipment/plant safely
- Provides recommendations in terms of remedial actions

## Design Verification & Appraisal



Velosi offers independent third-party services in design appraisal to streamline the design and construction process by reviewing design and drawings in accordance with all the widely accepted operational, safety, environmental and industry standards. We also ensure that the design review and verification are conducted in line with the international codes, statutory regulations and client specifications.

The whole process of design verification and appraisal is crucial in identifying and resolving design discrepancies ahead of procurement and fabrication. At Velosi, it is always performed as specified by the popular global standards such as ASME, API, ACI, ASCE, BS, and TEMA, among other industry measures.

### Deliverables

- Design Verification Study

## Project Management Consultancy Services

Organizations face various challenges - from tight budgets, personnel reductions, rising costs, increasing security risks and competition for funding - that point to one basic development imperative, 'enhance project impact'. To deliver this impact, a project management team has to work hard by quickly introducing new management processes and technologies; learning new skills and tasks; and by constantly increasing efficiency to reduce operating costs.

Velosi provides world-class Project Management Consultancy (PMC) services to help you attain your investment goals. At Velosi, we have the best project management consultants who use process, discipline, and leadership to break down functional barriers, engage stakeholders, and ensure our clients' projects are finished within the stipulated budget, scope, and schedule.



### Benefits of PMC:

- Delivers detailed reviews of the project management processes and capabilities
- Provides accurate analysis of defects in the processes and/or controls
- Offers expert guidance for better processes and/or controls
- Helps in employing new tools, processes and procedures
- Provides change management and transformation support

### Deliverables

- Project Execution Plan
- Health, Safety and Environment (HSE) Plans
- Document Control
- Procurement Expediting
- Logistics Support
- Project schedule



## Pipeline Integrity Services

Pipelines serve as a vital part of the energy infrastructure, therefore, the safe and reliable management of pipelines is critical to an organization's operational capabilities. Also, the changing dynamics of the oil and gas industry requires an extensive evaluation of commercial criteria and operational risks faced by the pipeline operators.

Pipeline Integrity Services are defined as a comprehensive and systematic process to counter the hazards to pipeline integrity. The process incorporates pressure testing, in-line inspection and direct assessment methods, among many others.

Velosi's dynamic Pipeline Integrity Services encompass a range of solutions to ensure safe and efficient operation of the pipeline, track regulatory compliance, and to provide a clear overview of the integrity of both onshore and offshore pipelines as well as gas distribution network components.

**Velosi's Pipeline Integrity Services incorporate the below segments:**



### Pipeline Construction Quality Services

Pipeline operators and stakeholders around the world are obliged to focus on implementing effective quality management during the construction of a pipeline through an organized framework. All these efforts help reduce the current or future security threats of the pipeline.

If a proper strategy for quality assurance is enforced during construction, the chance for a leak or rupture will be reduced significantly, ensuring a drive towards zero injuries, incidents and occupational hazards.

Velosi provides an absolute range of quality management services for both onshore and offshore pipeline development projects. Our quality management services - incorporating both steel and plastic material constructions - constitute:

- Project verification services
- Design review and approval
- Material selection and quality inspection
- Audit, surveillance, installation and commissioning services

## External Corrosion Direct Assessment (ECDA)



External Corrosion Direct Assessment (ECDA) is a methodical procedure to improve safety through evaluating and decreasing the effect of external corrosion on pipeline integrity.

Velosi provides pipeline operators with an all-inclusive approach for all the four stages of the External Corrosion Direct Assessment process. Our approaches are based on the ultra-modern experience of industry best practices and a comprehensive corrosion database.

The ECDA services offered by Velosi can dynamically avoid corrosion problems from developing to a size that would eventually impact a pipeline's structural integrity by:

- Assessing and addressing corrosion challenges.
- Fixing corrosion defects
- Rectifying the causes of corrosion

## Guided Wave Pipeline Screening



Oil leaks are one of the main issues faced by the oil and gas sector with more than 30% of the pipeline hazards caused by corrosion. In guided wave pipeline screening, the guided waves are discharged by active sensors that reproduce along with the pipeline structure under inspection. At each break that the guided wave meets, an echo is reflected and apprehended by sensors.

Velosi offers top-class Guided Wave Pipeline Screening services that reduce inspection costs significantly. The screening services provide better damage monitoring capacity to assure the structural integrity of pipelines.

### Benefits of our Guided Wave Pipeline Screening:

- Evaluates lengthy pipes quickly.
- Examines 100% of the pipe wall.
- Identifies corrosion in insulated and buried pipelines



## Software Solutions

Velosi has successfully developed and implemented multiple software solutions for a diverse range of clients in the energy sector around the world. Through our team of experienced and highly qualified software engineers, we provide innovative software services to many organizations, thus empowering them to acquire the best value from their technology investment.

We work in close liaison with technical teams at energy companies to leverage the technology and infrastructure, support operations, and to provide a market-tested and accepted one-stop customized software solution for all the asset types of our clients in the energy sector.



# VAIL-Plant (Asset Integrity Management System)

VAIL-Plant is a leading fully certified (API 580 and ASME B31.8S) Asset Integrity Software Solution specifically designed for Oil & Gas, Power and Petrochemical industries which facilitates inspection and maintenance management cycles by using RBI,RCM,SIL, and FMECA approaches. VAIL-Plant is an effective asset management tool that contributes to ensure the company's assets health and performance by enabling the plant operators to improve overall control of their asset condition by optimizing inspection, asset monitoring and linking to their maintenance systems.

VAIL-Plant helps maintain history and records, evaluates asset conditions, identifies highest risk assets, prevents plants from damage and corrosion, prioritizes and manages the efforts of an inspection program and calculates the man-hour resource planning.

VAIL-Plant incorporates the following modules to cover different categories of equipment:

- Pressurized Equipment Management System (PEMS)
- Pipeline Integrity Management System Onshore (PIMSON)
- Pipeline Integrity Management System Offshore (PIMSOFF)
- Structure Integrity Management System (SIMS)
- Pressure Safety Valve & Relief Valve Management System (PSVMS)
- Electrical, Instrumental and Rotary Management System (EIRMS)
- Lifting Equipment Management System (LEMS)
- Wellhead Integrity Management System (WHIMS)
- Civil Integrity Management System (CIMS)
- Cathodic Protection Management System (CPMS)
- Hull Integrity Management System (HIMS)
- Flexible Riser Integrity Management System (FRIMS)
- Computerized Maintenance Management System (CMMS)
- Asset Performance Management System (APMS)
- Inspection Scheduling Management System (ISMS)
- Enterprise Resource Planning System Interface (ERPI)



## Certifications

VAIL-Plant software has been designed to meet market specifications in compliance with industry standards and is Exida accredited for API 580, ASME B31.8S, and IEC 61508. VAIL-Plant is also SAP-certified for Integration with SAP ERP framework.



**API 580: 2016**  
Risk Based Inspection process compliance



**ASME B31.8S: 2012**  
Compliance with ASME B31.8S & Geographical Information System (GIS)



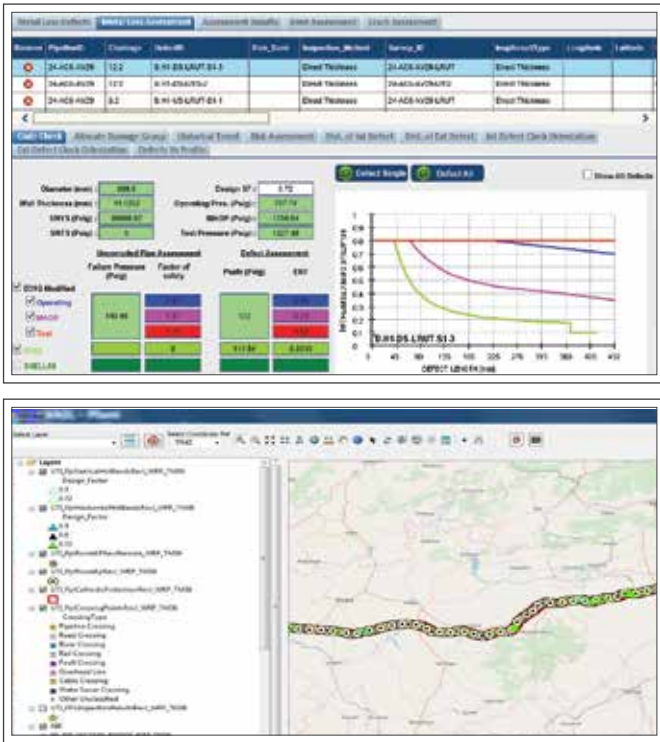
**VAIL-Plant SAP Integration:**  
VAIL-Plant is certified to be integrated with SAP PM-PCS for ECC5.0/ ECC6.0



**IEC 61508:**  
Software Development Process Certification

# Pipeline Integrity Management System (PIMS)

VAIL-Plant PIMS modules for Onshore and Offshore pipeline is capable of managing and monitoring semi-qualitative Risk Assessment and Inspection planning for pipelines. Based on API 580, this module can be integrated with GIS to view data on geographical maps (e.g. pipeline route, equipment location, pipeline sections, etc.)



## Module contains following main features:

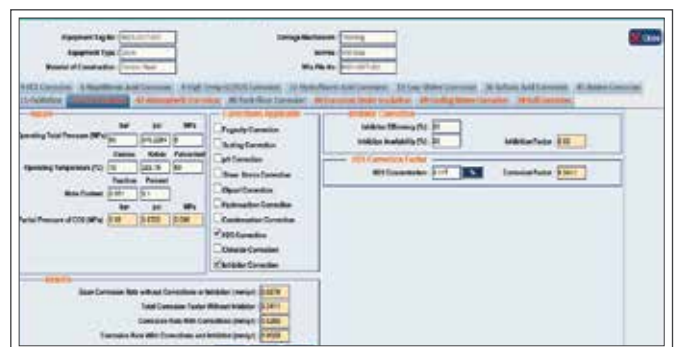
- Pipeline profile recording & Plotting
- Probability of Failure (POF) calculation and plotting along the pipeline (POF Vs TIME) against applicable damage mechanism
- Consequences of Failure (COF) calculation against applicable damage mechanism
- Risk Assessment against Stress Corrosion Cracking (SCC)
- External and Internal Corrosion Direct Assessment (ECDA & ICDA)
- Risk Assessment against third party damage
- Corrosion calculation (NORSOK M-506)
- Scheduling of integrity management and inspection
- Defect Assessment based on B31.G, B31.G Modify & Shell 92

# Pressurized Equipment Management System (PEMS)

VAIL-Plant PEMS module contains a comprehensive database for Piping and Pressurized Equipment such as Vessels, Tanks, Heat Exchangers, etc. It covers the complete Risk Assessment Process and Facilitates Inspection Planning to estimate the remaining life of an asset and the next inspection date.

## Module contains following main features:

- Engineering data capturing along with hierarchy management drawings, isometrics, PFD's and P&ID's
- Semi-quantitative RBI methodology for risk evaluation and inspection planning against identified damage mechanisms compliance with API ST. 580
- Inspection history recording with respect to multiple positions and TML's
- Estimated Corrosion Rate Models based on API 581
- Failure and replacement history recording
- KPI's identifications and calculation/evaluations
- Short term/long term corrosion rate & remnant life calculations
- Short term/long term corrosion rate & remnant life calculations
- Trends and console reporting
- Plant Inspection Requirements (PIR) generation
- Root Cause Analysis (RCA) against failures
- Data importing from excel workspace template

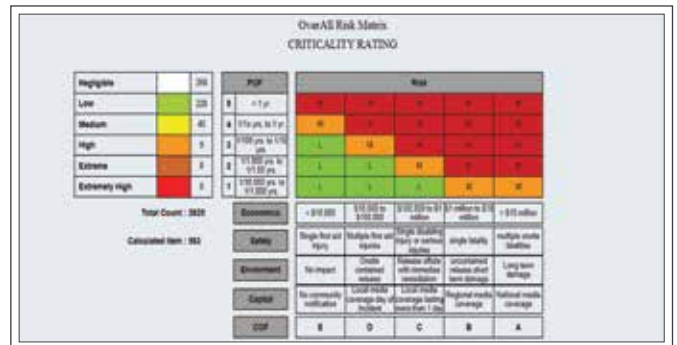


# Electrical, Instrumentation and Rotary Management System (EIRMS)

VAIL-Plant EIRMS module facilitates Reliability Centered Maintenance (RCM) and is capable of maintaining & organizing maintenance records and details of equipment such as Engine, Generators, Transmitter and Pressure Gauge, etc.

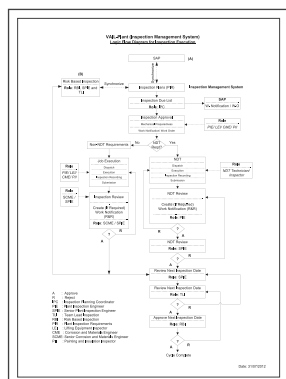
## Module contains following main features:

- Mean Time Between Failures (MTBF) and Mean Time To Repair (MTTR) calculations
- Failure Mode, Effect and Criticality Analysis and their Criticality Matrix
- Reliability Operator and Reliability Generic Data Recording
- Hierarchy Recording and Management
- Design / Operational Data Capturing
- Functional Data Recording
- Plant Maintenance Routines (PMR) generation
- Work Order and Work Packs Generation
- Inspection History Recording
- Maintenance History Recording
- Failures and Replacements Recording



# Inspection Scheduling Management System (ISMS)

VAIL-Plant ISMS module coordinates with other VAIL-Plant modules to facilitate their Inspection planning and recordings. With ISMS, the operator can schedule and execute inspection schedules generated while documenting the inspections to create work orders.



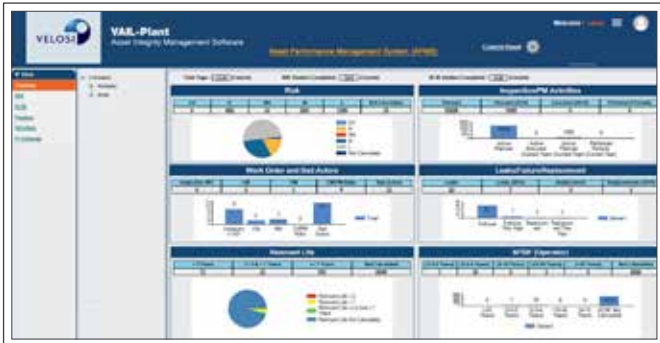
## Module contains following main features:

- Capable to manage inspection activities for all types of assets/ equipment (tags)
- Allows users to plan, schedule and execute PIR's
- Allows users to create work scopes, work packages for execution of PIR on a tag or a set of tags (package like boilers, pipe)
- Allows Reviewers and Approvers to enter remarks and comments
- Allows monitoring process of the PIR Plan
- Bulk data importing from excel workspace templates for fast data feeding
- Role based access, audit trails, data security and integrity
- Color coding to have a one-look summary of the status of inspections



## Asset Performance Management System (APMS)

VAIL-Plant APMS module is an operator's single window specifically designed to equip oil and gas organizations to monitor the overall status of System Integrity parameters such as Remnant Life, Inspection Activities, Leaks/Failures, Risk Ranking, Corrosion Rate, and Replacements via the dashboard. It allows the operator to perform extensive filtering to preview the desired output in form of graphs and reports for data analysis.



### Module contains following main features:

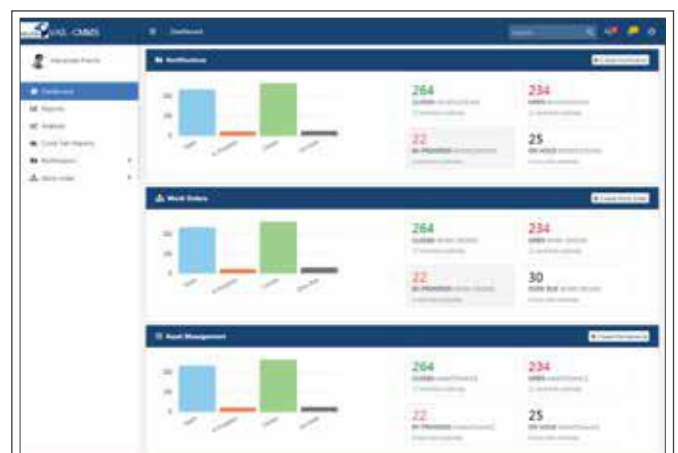
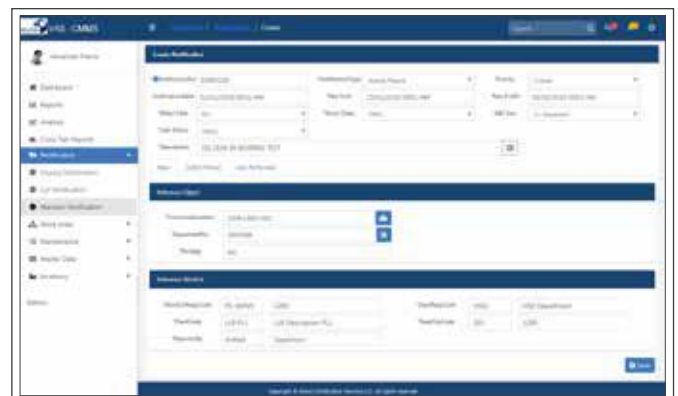
- Single dashboard for RBI, RCM, Pipeline, Structure and Process Information Historian studies
- View overall status of VAIL-Plant modules individually and altogether
- Filter out the graphs with respect to the area and modules on the navigation tree
- User-defined graphical charts and data
- View Total Tag Counts, Total number of completed RBI studies and Total number of completed FMECA studies on the screen
- View the relevant details of the metric by clicking any graph or reported figure
- Redirect to the modules to view the particular metric details

## Computerized Maintenance Management System (CMMS)

VAIL-Plant CMMS module addresses the complete lifecycle of a technical object including Notification and Work order creation until inspection maintenance closeout. Using VAIL-Plant CMMS, it gets easier for operators to create and track work activities, parts usage, and asset lifecycle.

### Module contains following main features:

- Generates and prioritizes work
- Monitor the status of equipment or assets
- Allows operator to plan, manage, schedule maintenance and approve work orders
- Keep a track of all scheduled and unscheduled maintenance activities
- Improved Planning and Scheduling
- Maintains past historical records of all work orders that have been issued
- Produce Real-time records of current job activities
- Tracks resource, budget, and labor costs for every component
- Facilitates inventory control with an integrated range of capabilities
- An effective and affordable application that facilitates the efficient use of resources



## VAIL - PHA (Process Hazard Analysis)

Process Hazard Analysis (PHA) is defined as the analysis of potential causes and consequences of fires, explosions, releases of toxic or flammable chemicals and major spills of hazardous chemicals. It focuses on instrumentation, equipment, utilities, human interference, and external elements that can possibly impact the process.

**VAIL- PHA SIL** software is Velosi's proprietary software and is built to execute all stages of SIL Classification, SIL Verification and preparation of Safety Requirement Specifications (SRS). The software also supports testing interval and Spurious Trip Rate (STR) calculations of SIFs.

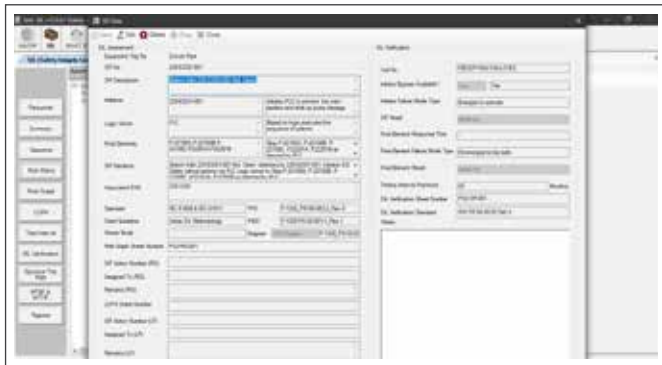
### VAIL-SIL offers the following features:



- Overview of SILs with LOPA, Risk Matrix, and Risk Graph comparisons
- Perceive dynamic changes and show risk levels, SIL levels in the Risk Matrix
- Target PFD calculations
- Calculate the Test Interval
- Calculate Mean Time Between Failure (MTBF) and Mean Time To Repair (MTTR) along with general reliability data
- Dynamic reporting
- Record Management of the SIL Study Session Team

**VAIL- PHA HAZOP** software tool is used to identify potential hazards to a process system. It was developed by using API 750, API 14J and API 1150 as reference documents.

### VAIL-HAZOP offers the following features:



- Project Team & Session Recording and Dynamic Reporting for project and facility
- Nodes data and scenarios recording
- Dynamic action sheet and worksheet generation
- Analysis summary
- Actions and tasks allocation, their status and priority ranking
- HAZOP study screen view

## VAIL-PSRA (Petrol Station Risk Assessment)

Velosi's VAIL-PSRA is a professional software solution categorically developed in accordance with the guidelines set out in HS (G) 146: Dispensing Petro, NFPA 30A, and PSSI-S-GDL-001 for the risk assessment purposes at petrol stations.

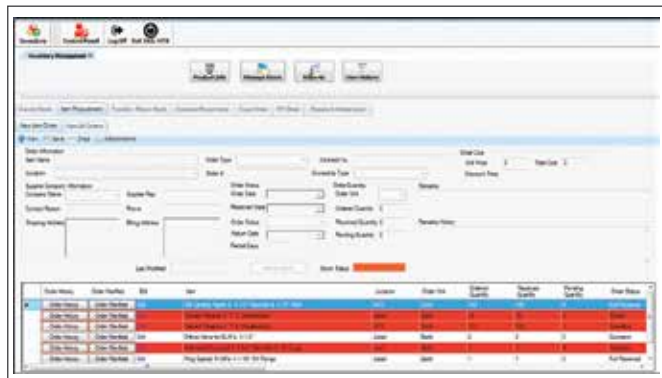
This pragmatic tool acts as a guide or useful checklist to ensure that the precautionary measures at petrol stations are in place and are observed properly during operations. VAIL - PSRA incorporates a systematic approach to provide risk and hazard management services to the oil and gas sector.



## VAIL-MTS (Material Tracking System)

The VAIL-MTS is a fully-functional software which is particularly developed as part of the asset tagging, tracking & verification purposes to help users effectively track, distribute, and maintain their assets. This easy-to-use software facilitates tracking the location of all the rental and owned equipment, drawing periodic reports and configuring alarms based on predetermined critical stock values.

VAIL-MTS can organize and track materials in different disciplines used in the Energy industries.



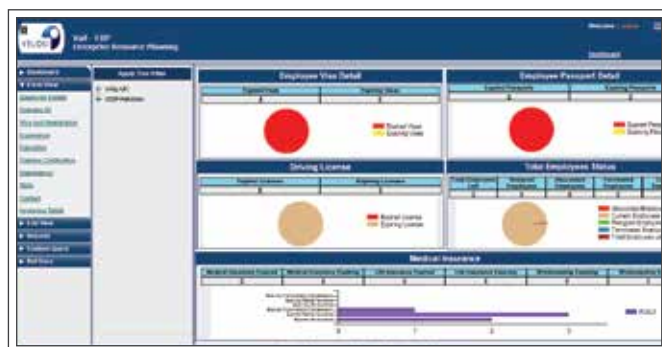
## VAIL-ERP (Enterprise Resource Planning)

VAIL- ERP is an Enterprise Resource Planning Software or business management application that provides integrated, cost-effective and comprehensive ERP solutions. VAIL- ERP package is designed to support and integrate almost every functional area of a business process such as procurement of goods and services, sale and distribution, finance, accountings, human resource.



**VAIL - ERP comprises the following modules:**

- Accounts Management System
- Human Resource Management System (HRMS)
- Sales and Purchase
- Customer Relationship Management (CRM)
- Project Management
- Help Desk
- Asset Management System
- Material Tracking System (MTS)
- Cost Time Resource Management (CTR)



## VAIL-CTR (Cost time & Resources Management)

Cost, time and resource are three key aspects of projects that contractors and engineers need to account for. A Cost, Time and Resource Management module is usually used for generating the onshore man-hour estimate and cost estimate linked with the man-hours for the assigned project by the use of CTRs.

**Benefits of VAIL - CTR:**

- Accessible through any browser on the internet
- Adjustable resource allocations
- Better planning and better project tracking
- Capacity planning and management
- Demand fulfilment is done right
- Evolving stakeholder communication
- Fostering team collaborations
- Customized reports



## VAIL-HRMS (Human Resource Management System)

A Human Resource Management System (HRMS) is a type of human resources (HR) software that incorporates a range of systems and processes to assure the smooth management of human resources, business processes and data. Velosi's VAIL - HRMS software is developed for businesses to help combine a range of necessary HR functions, including managing payroll, storing employee data, time and attendance, recruitment, benefits administration, employee performance management, and tracking down competency and training records.

VAIL HRMS includes the following modules:

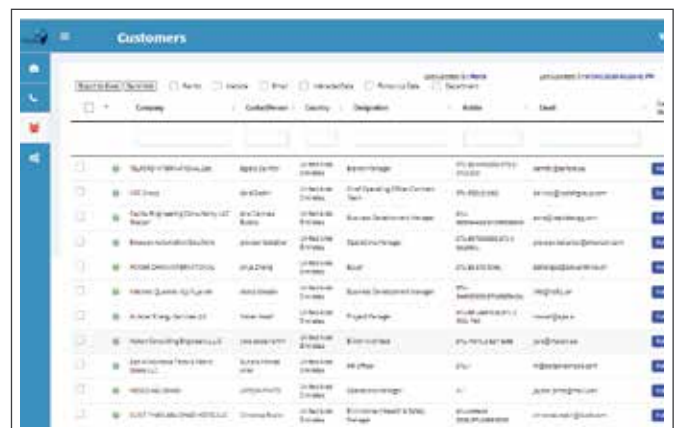
- Managing payroll
- Recruitment and onboarding
- Accounting
- Keeping attendance records and tracking absenteeism



## VAIL-CRM (Customer Relationship Management)

VAIL CRM is a full customer relationship management (CRM) suite with marketing, sales, and service capabilities that are fast, familiar, and flexible, to help businesses of all sizes find, win, and grow profitable customer relationships. VAIL CRM is a carefully built software by professionals which gives importance to the data & its security along with features like:

- List Generator
- Campaign management
- Contact Management
- Sales Team & Customer Opportunity Management
- Reports and Dashboards
- Sales Analytics
- Mobile CRM
- Sales Forecasting
- Email Client Integration
- Sales Performance Management
- Meeting Scheduling
- Email Marketing



## VAIL-Flow (Workflow Management)

Workflow Management Software is an application designed to set up and monitor a specific group of approval processes along with its sequence. It allows users to collaborate and automate processes, as well as to define different workflows for various kinds of processes and applications. It can also help reduce the manual efforts involved and automate redundant tasks.

VAIL-Flow is a dynamic approval management software exclusively developed to revolutionize the way your documents are approved. This software can be used to manage the approvals of various types of documents from internal HR approvals to the issuance of technical reports.



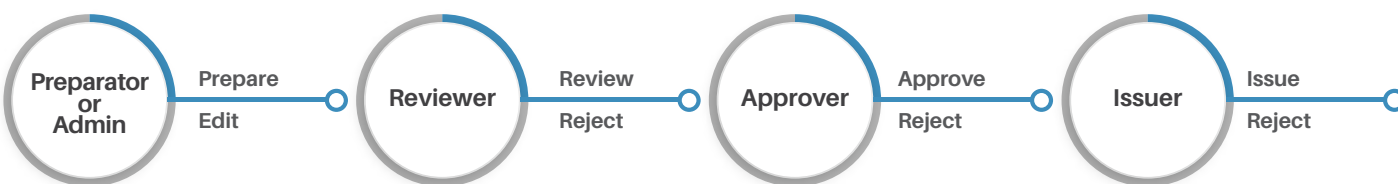
## VAIL-ORP (Online Reporting Portal)

VAIL- Online Reporting Portal is a web-based application which enables our clients to issue inspection/service reports after the completion of a particular assessment by our technical team.

The application allows its users to view their inspection/service reports and conveniently download them whenever required. However, in order to get those reports, users need to have the specific authorization i.e. preparatory, reviewer, approver and issuer.



The users and their roles are illustrated in the diagram below:



## VAIL-Feedback

VAIL-Feedback is Velosi's exclusively designed omni-channel Customer Feedback software. It encompasses a platform for cross-channel feedback management and versatile survey solutions to collect and analyze websites as well as mobile feedback in real-time.

Our feedback software comes with an abundance of features to adequately accumulate reviews, opinions or any data that is vital to the smooth operation of a business. VAIL-Feedback allows you to build stronger relationships with your guests and customers while providing you with the utmost flexibility on when and how to compile feedback.





## Audits and Assessments

An audit is an evaluation of how work processes are regulated within an organization. An assessment is a method of gathering information by evaluating the answers to formulated questions. Professionally conducted Audit and Assessment are crucial in ensuring the long term compliance, maintenance and performance of all businesses.

At Velosi, our expert auditors provide professional audit and assessment services for a range of industries, including the oil and gas, energy, petrochemical, construction, and many more.



## Velosi offers the following Audits and Assessments:

<b>OHSAS Safety Audits</b>	A globally recognized standard used to evaluate the status of an organization's occupational health and safety management system in compliance with the specific requirements.
<b>Technical Audits</b>	A form of assessment used to analyze environmental compliance and management system implementation gaps, besides associated corrective actions.
<b>Environmental Audits</b>	A sort of audit done by an auditor, engineer or subject-matter expert to evaluate the flaws or areas of improvement in a system, process or proposal.
<b>Process Safety Management Audit</b>	An audit method used as part of the responsible and meticulous industrial measurement to ensure the safety of workers, and the whole environment of facilities and assets.
<b>Structural Audits</b>	A complete health and performance analysis of a building.
<b>Firefighting System Adequacy Audits</b>	An audit method that carries out a systematic, crucial evaluation of all possible fire hazards including personnel, premises, services and operation process.
<b>Regulatory Compliance Audits</b>	A type of audit used to assess an organization's compliance for testing the adequacy of controls in place and verifying that the organization complies with the standard policies and operational procedures.
<b>Flammable Storage Facility Audits</b>	A method of audit used to evaluate high-risk issues related to the storage and handling of flammable materials.
<b>Electrical Audits</b>	An audit that comprises measurement, visual inspection, thermal scanning and appraisal of results to comprehend the circuit condition and any potential or existing overheating of the circuit.



## ISO Certification and Training Services

Velosi provides unique ISO certification and training services to help companies achieve greater performance by defining required business standard procedures that the companies must follow to accomplish their goals and objectives.

Our best-in-class ISO certification services also help companies create an organizational culture that spontaneously engages in a constant cycle of self-evaluation, correction, and advancement of operations and processes by boosting the level of employee awareness, management, leadership and commitment.





## ISO Certification and Training Services

We are committed to providing ISO certification and training services to help companies meet international standards & business protocols. Our certification programs help enterprises engage in continuous in-house development leading to the advancement of operations by increasing the level of employee awareness, management and safety.

Our highly qualified ISO experts have the practical experience to achieve results that will provide clients the following benefits:

- Effective use of resources & enhanced financial performance.
- Improved risk management and protection of people as well as the environment.
- Ability to deliver constant and improved services & products, thereby boosting value to customers and shareholders.



### Velosi offers Certification and Training Services for the below ISO Standards:

- ISO 9001 - Quality Management System
- ISO 14001- Environmental Management System
- OHSAS 18001 - Occupational Health and Safety Management Systems
- ISO 45001 - Occupational Health and Safety Management Systems
- ISO 22000 - Food Safety Management System
- HACCP - Hazard Analysis & Critical Control Points
- ISO 20000 - Information Technology - Services Management System
- ISO 27001 - Information Security Management System
- ISO 50001 - Energy Management System
- ISO 13485 - QMS - Medical Devices Quality Management Systems
- And All Other Standards (Compliance)

### Accreditation Bodies\*

\*We are accredited through our associate office.



## Data Management and Analytics

Data Management and Analytics are the key elements used in the quantitative method to derive insights from data for making informed business decisions and thereby driving organizational performance. We help our clients in deciding which data management and analytics method to employ to achieve their business goal and to monitor the progress of the business situation at hand.

Velosi guides and supports our clients to access information enclosed within huge volumes of data, combine it with external data from third-party providers and social networks, and to integrate it with the clients' core business operations. We provide insights into our clients' strategy and processes, contributing to effective decision-making. Our data scientists and quantitative experts can also help source, cleanse, organize and interpret raw data into advanced business information through modelling and visualization.



## Data Management and Analytics

We offer comprehensive Data Management and Analytics solutions across various verticals in information management, data governance and advanced analytics that can unleash organizational potential by helping the organizations make informed decision making and leveraging the organization's most valuable data assets to increase stakeholder value.

Velosi's Data Management and Analytics solutions enclose the following elements:

<b>Data Management</b>	Our exclusive range of Data Management services - that comprise data verification, data mining, data cleansing, data entry, and data processing - help our clients effectively manage their data in a secure way, ensuring to achieve their business goal.
<b>Data Governance</b>	We offer the best available Data Governance services that help organizations monitor and control data quality processes from a single location, improve data rapidly.
<b>Business Intelligence/ Analytics</b>	We provide excellent Business Intelligence/Analytics solutions to help our clients extract the maximum value from the data, enabling and empowering them to succeed in a risk-based, competitive business environment.
<b>Enterprise Data Management</b>	Our exceptional Enterprise Data Management solutions help our clients achieve their data management goals in terms of quality, security, and accessibility, maximizing operational efficiency and reducing costs.





## Some of Our Latest Equipment

Velosi offers a wide variety of Third Party Inspection and Asset Integrity Management services that are supported with our in-house latest tools and industry-leading equipment that are necessary to ensure accurate data will be generated, calibration and survey requirement will be conducted on time for all related industrial measurements necessary to maintain the integrity of an assets.

Velosi qualified and experienced inspectors and engineers perform inspection services that consist of performance verification, maintenance and preventive failure assessment to help our clients augment productivity, reducing costly downtime and meet regulatory approvals and registrations from various internationally recognized entities.

Equipment	Inspection Services
Eddyfi Lyft	Corrosion Under Insulation (CUI)
Teletest Focus+	Long Range UT (LRUT)/Guided Wave
Olympus XRF Analyzer	Positive Material Identification (PMI)
Floormap3DiM-R	Magnetic Flux Leakage (MFL) Tank Bottom Inspection
Olympus 38DL Plus & GE DMS	Ultrasonic Thickness Measurement
Elektro Physik MiniTest 745	Coating Thickness Measurement
Eddify V750 Vacuum Box	Tank Weld Inspection
Nikon XF1"	Storage Tank Survey and Calibration Solutions



## Corrosion Under Insulation (CUI)

Pulsed Eddy Current (PEC) Technology is a Non-Destructive Testing (NDT) technique which is generally used to inspect conductive material using induced electromagnetic techniques. Since direct contact with the material is not required, inspections may be carried out through non-conductive coatings such as paint.



### Eddyfi Lyft Features:

- Inspection is possible through thick metal and insulation.
- Save on insulation removal costs
- Real-time C-scan imaging and fast data acquisition.
- Grid-mapping and dynamic scanning modes.
- Reduce inspection time and operator dependence.

Velosi has the latest state of the art Lyft from Eddyfi which is the industry leading PEC tool. Eddyfi integrated automated software features (SmartPULSE™) that ease inspection, as well as an innovative, patent-pending technology redefining the way PEC signals are used by Lyft. Together, these features guarantee reliable and repeatable results. Three plug-and-play probes of different sizes for the right balance between wall thickness and liftoff complement Lyft.

## Long Range UT (LRUT) / Guided Wave

Long Range Ultrasonic Testing (LRUT) is an efficient technique used to test large volumes of material from a single test point which provides swift screening for corrosion and erosion in pipelines.



### Teletest Focus+ Features:

- A fast, productive method of inspection for tubular structures for corrosion/erosion detection.
- Inspect long lengths of the pipeline from a single location using Teletest Focus+™.
- 100% examination including areas such as at clamps, and sleeved or buried pipes.
- Capable of inspecting inaccessible areas other NDT techniques cannot reach.
- Inspect up to 350m from one location.
- Inspection can be done at elevated temperatures up to 350°C.
- Excellent for inspection of pipelines at river and road crossing.

Velosi has the latest state of the art Focus+ from Teletest. This equipment can inspect long lengths of pipeline from a single tool location. This pulse-echo method using Guided Waves means that the sound is transmitted along the axial length pipe finding corrosion and inspecting inaccessible areas not covered by conventional means. No other method can cover such a large surface area inspection in one test.

## Positive Material Identification (PMI)

XRF (X-ray fluorescence) is a powerful, nondestructive technique for measuring elemental composition from magnesium (Mg) to uranium (U), from parts per million to 100%.



### Olympus XRF Analyzer Features:

- Fast, easy and completely non-destructive analysis method for every metal component.
- Find potentially mixed-up alloys.
- Ensure welded components have used the correct filler material.
- Onsite analysis enables real-time information and decision making.

Velosi has the latest state of the art handheld XRF analyzer from Olympus. Handheld XRF analyzers are portable devices that can be used on location for immediate, lab-quality results to help you determine the next course of action and where it's needed.

Common applications include scrap sorting, alloy grade identification, quality control (QC) in metal manufacturing, geological exploration or mining, testing industrial materials like cement or coal, and testing for lead in paint or other contaminants in consumer products.

## Magnetic Flux Leakage (MFL)

Magnetic Flux Leakage (MFL) is a Non-Destructive Testing (NDT) technique used for rapid and robust corrosion detection of Above Ground Storage Tank (AST) floors.



### Floormap3DiM-R Features:

- Top and bottom plate corrosion views
- High-speed up to 1m/s
- Motor-driven for consistent results
- Easy to understand corrosion data
- Dedicated reporting software
- Three operating modes, mapping, stop-on-defect, and free scan

Velosi has the latest state of the art Tank Floor scanner "Floormap3DiM-R" from Silver Wing. This model has a full-featured system offering three inspection modes: Mapping, free-scan and stop-on-defect. Floor map with this model, produces detailed plan views of inspection areas, image of the scanned surface, the nature, geometry, location and percentage of metal loss with top & bottom discrimination. Our qualified & experienced inspectors use industry-leading equipment such as Floormap3DiM-R to carry out cost-effective and high-speed inspection of tank floors.

## Ultrasonic Thickness Measurement

Thickness measurements are done for corrosion monitoring with the objective of documenting, managing and analyzing thickness or corrosion data to predict the remaining usable life for an asset.



### Olympus 38DL Plus & GE DMS Features:

- Wide thickness range measurements.
- Do not require Paint removal for thickness measurement.
- Time-based B-scan mode.
- Multiple measurement modes, min/max and differential

Velosi has the latest state of the art thickness gauges with data loggers from Olympus 38 DL Plus and GE DMS Go Plus. These high end models incorporate innovative designs and complete all inspection requirements. They are suitable for a wide range of inspections, especially corrosion applications.

## Coating Thickness Measurement

Dry film thickness is the most critical measurement for coatings because of its impact on the coating process, quality and cost. Dry film thickness measurements can be used to evaluate a coating's expected life, the product's appearance and performance, and ensure compliance with a host of International Standards & project specifications.



### Elektro Physik MiniTest 745 Features:

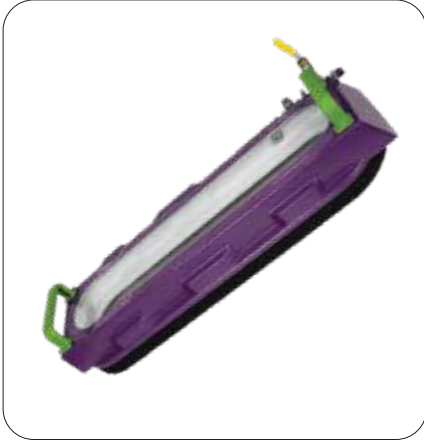
- ElektroPhysik MiniTest 745 can be used, regardless of regular or irregular shapes.
- Featured with SDS Technology or Sensor-Integrated Digital Signal Processing meaning a measuring signal is processed in its entirety "on the spot", thus providing precision & very high accuracy.
- Can check nonmagnetic Cladding Thickness as well (Titanium, SS, etc.).

Velosi has the latest state of the art coating thickness measurement gauge MiniTest 745 from ElektroPhysik. The MiniTest 745 is the best variant of the MiniTest 700 series with interchangeable sensors that can be connected to the device either by cable or wirelessly via Bluetooth for greater freedom when measuring coating thickness.

This high end model enables the non-destructive measurement of coating thickness for non-magnetic coatings (paint, synthetic material, chrome and other electro-plated, non-magnetic coatings, etc.) on ferromagnetic substrates (steel/iron), and insulating coatings (lacquer, enamel, synthetic material, anodised aluminium, etc.) on conductive substrates (aluminium, copper, titanium, austenitic stainless steel).

## Tank Weld Inspection

Bubble leak (or vacuum box) testing is an essential part of tank inspections as required by the American Petroleum Institute (API) and other international standards associations to establish the condition of tank bottom plate welds and shell-to-bottom plate welds.



### Eddyfi V750 Vacuum Box Features:

- Designed to API 650/653 recommendations.
- 750 mm weld inspection length.
- Integrated LED lights.
- Calibrated vacuum relief valve.
- Superior build quality with robust cast aluminum body.
- Two-stage seal design.
- Electric vacuum pump or compressor driven.
- Ability to inspect tank corner welds.

Velosi has the latest state of the art V750 Vacuum Box for Weld Inspection from Eddyfi Technologies. This equipment is electric pump driven with built-in LEDs for efficiency, calibrated gauge for accuracy and vacuum relief valve for safer and quicker inspections.

## Storage Tank Survey and Calibration Solutions

Tank Settlement survey includes Tank Verticality Evaluation, Out of roundness of Shell, Edge Settlement, Bottom plate settlement and Tank tilt survey, which are essential components of tank inspections as required by the American Petroleum Institute (API) and other international standards associations to establish the condition of the tank.

Tank calibration helps in the establishment of accurate custody transfer figures and maintaining good contractual relationships in global trading of chemicals, petroleum products and liquefied gases.



### Nikon XF1" Features:

- Angle accuracy: 1" (0.3mgon) / 2" (0.6mgon) / 3" (1.0mgon) / 5" (1.5mgon) (ISO 17123)
- EDM type: Reflectorless technology
- Autofocus
- Distance accuracy: (2mm + 2ppm)
- Distance range: Up to 5,000m (16,404 ft) to single prism (ISO 17123-4)
- Reflectorless range: Up to 800 m (2,625 ft) (KGC 90%)
- Compensator: Dual axis

Velosi has the latest state of the art XF 1" Total Station for calibration and settlement survey from Nikon having maximum angle accuracy available of any total station. Our qualified & experienced inspectors use industry-leading equipment and advanced methodology to carry out cost-effective and efficient storage tank calibration and Settlement Survey.





# Our Experience

Velosi, with its global presence and continuously expanding service offerings, have almost four decades of rich experience in providing a complete range of Asset Integrity, HSE, Engineering, and Software solutions to leading local and international companies in the oil and gas industry. Besides, we have completed over 600 distinguished projects for various clients around the world.

Our team comprises highly qualified and experienced multidiscipline engineers, specialists and subject matter experts to fulfill your specific requirements. Here is the preview of some of our project case studies with our satisfied domestic and overseas clientele.

S/N	Case Studies	Client Name	Location	Service	Page No.
1	On-stream Inspection of 20 Nos LPG Bullets	Exterran Services (UK) Ltd.	Karachi, Pakistan	On-stream Inspection of 20 Nos LPG Bullets	67
2	Third-Party Inspection of Lifting Equipment & Storage Racks	GlaxoSmithKline (GSK)	Karachi, Pakistan	Third Party Inspection of Lifting Equipment & Storage Racks	68
3	Third Party Inspection of CNG Stations, LPG site Verification Inspection	OGRA	Islamabad, Pakistan	Third Party Inspection LPG site Verification Inspection	69
4	NDT Service of PTC Rotary Shafts	Pakistan Tobacco Company (PTC)	Islamabad, Pakistan	NDT Service of PTC Rotary Shafts	70
5	Mechanical Integrity Assessment & NDT Services Including All Longitudinal & Circumferential Welded Joints at MPCL Zarghun	MPCL	Karachi, Pakistan	Mechanical Integrity Assessment & NDT Services	71
6	NDT Inspection on High Pressure Pipeline Downstream of Compressor Stations	SNGPL	Faisalabad, Pakistan	NDT Inspection on High Pressure Pipeline Downstream of Compressor Stations	72
7	Visual, Dimensional Inspection & Hydrostatic Test Witness of Trim Boiler at Descon Lahore Manufacturing Works for MOL Pakistan Oil and Gas Co. B.V.	MOL Pakistan Oil and Gas Co. B.V.	Islamabad, Pakistan	Visual, Dimensional Inspection & Hydrostatic Test Witness of Trim Boiler	73
8	Pre-shipment Inspections and Local Inspection Services	Mari Petroleum Company Limited (MPCL)	Islamabad, Pakistan	Pre-shipment Inspections, NDT Inspections LEEA Services Trainings Valve Inspection	74
9	Local Pre-shipment Inspection of Polyethylene Pipe for SNGPL	SNGPL	Karachi, Pakistan	Local Pre-shipment Inspection	75
10	Risk Based Inspections Assessment of Piping for GSK	GSK	Karachi, Pakistan	Risk Based Inspection	76
11	Risk Base Inspection of Statutory Equipment	Pakistan Petroleum Limited (PPL)	Karachi, Pakistan	Risk Based Inspection	77
12	Design Review Consultancy Services of SBP New Office Buildings in Different Cities	State Bank of Pakistan	Karachi, Pakistan	Design Review Services	78
13	Consulting Services for Upgradation of Fire Fighting Systems at State Bank Pakistan BSC (Bank) Hyderabad	State Bank of Pakistan	Hyderabad, Pakistan	Survey Detail Engineering Bid Evaluation Award of Construction Contract Resident Supervision	79
14	Safety Integrity Level Assessment & Verification for Ammonia and LPG Circuits for Unilever ICF	Unilever ICF	Lahore, Pakistan	Safety Integrity Level Assessment & Verification	80
15	Consultancy Services for Technical Audit of SNGPL	SNGPL	Lahore, Pakistan	Technical Audit	81



**Client:**  
Exterran Services (UK) Ltd.



**Location:**  
Karachi, Pakistan



**Region:**  
South Asia



**Services:**  
On-stream Inspection of 20  
Nos LPG Bullets



## Objective

Velosi was assigned to perform On-Stream Inspection of 20 Numbers of LPG Bullets, at JJVL-I Plant, Jamshoro, Pakistan to assess the mechanical integrity of LPG Bullets, suggest corrective actions, to calculate remaining life and to determine next inspection interval as per standards in the most effective manner.

## Scope of Work

Following are the scope of work to meet the objectives:

- External Visual Inspection
- Ultrasonic Thickness Gauging
- Ultrasonic Flaw Detection of Welds
- Ultrasonic A-Scan
- Preparing Sketch for applied NDT Techniques

## Deliverables

Following reports was delivered upon completion of the project:

- Findings and Recommendations
- Calculation of Corrosion Rate and Remaining Life Analysis
- UT Thickness Study
- UFD Study
- UT Scan Study
- Development Sketch and Plan
- Detailed inspection report including the calculation of Corrosion rate, remaining life, next inspection interval and maximum allowable working with fit-for service till next inspection.



**Client:**  
GlaxoSmithKline (GSK)



**Location:**  
Karachi, Pakistan



**Region:**  
South Asia



**Services:**  
Third Party Inspection of Lifting Equipment & Storage Racks



## Objective

Velosi was assigned to perform the inspection of lifting equipment and storage racks to confirm the existing condition of the equipment against the international applicable standard.

## Scope of Work

The work included all applicable segments as identified but not limited to the following:

- Examination regarding the visual apparent condition of the equipment.
- Verification of manufacturer specified Safe Working Load (SWL).
- Operational test of equipment including verification of all safety devices.
- The structural integrity of equipment and their accessories, holding down arrangement, fastening, ropes, chains, and hoist inspected visually and or by using all applicable NDT techniques for defects/ cracking, corrosion, damage, or deformation.
- Load testing of lifting equipment conducted using calibrated and traceable load cells.
- The integrity of equipment evaluated by inspection results, load testing data, and validate suitability for continuous use in writing.

## Deliverables

Velosi completed the project and the following reports were delivered:

- Preliminary reports were issued daily which includes load testing data and repair requirements, was submitted to site engineer before leaving the site.
- After complete inspection at site, a detailed inspection report submitted which indicates requirements for repair (if any) before taking the equipment in service.



**Client:**  
OGRA



**Location:**  
Islamabad, Pakistan



**Region:**  
South Asia



**Services:**  
Third Party Inspection LPG  
site Verification Inspection



### Objective

Third Party Inspection of CNG Stations was delivered by Velosi to comply with the OGRA CNG (Production & Marketing) Rules implemented in 1992. Inspections carried out at different stages starting from installations to commissioning and regular operations of CNG Stations and LPG Sites all over the country.

### Scope of Work

Advanced NDT inspection of two-phase separator 110mm thickness:

- Inspect CNG Stations in light with CNG (Production & Marketing) Rules implanted in 1992 and Standard Code of Practice.
- Conduct annual safety inspections/audit at least once a year of operational CNG Stations & LPG site verification inspection according to OGRA rules.
- Conduct Re-Inspections to verify rectification of deficiencies pointed out by the Inspectors.
- Conduct a pre-commissioning inspection of newly established CNG Stations.
- Inspect CNG Stations for verification of complaints as deputed by the authority.
- Conduct specific inspection and a report thereof, on the direction and authorization by the authority in case of accidents at CNG Stations.

### Deliverables

- Detailed CNG inspection study
- Detailed LPG site verification inspection study



**Client:**  
Pakistan Tobacco  
Company (PTC)



**Location:**  
Islamabad, Pakistan



**Region:**  
South Asia



**Services:**  
NDT Service of PTC Rotary  
Shafts



## Objective

Pakistan Tobacco Company engaged Velosi at Akhora Khattak plant site to perform non-destructive inspections to ensure the integrity and reliability of the rotary shafts for their green leaf threshing (GLT) tobacco processing plant.

## Scope of Work

The scope of NDT services was performed through in-service inspection of rotary shafts of line1 & line2 GLT plant as per ASME SEC V AND SA388 (specification for ultrasonic examination of heavy steel forging)

The following inspection services hired by was performed by Velosi:

- VT, UFD and dye-penetrant testing of rotary shafts of auto feed area
- VT, UFD and dye-penetrant testing of rotary shafts of proportional feeder area
- VT, UFD and dye-penetrant testing of rotary shafts of lamina dryer area
- VT, UFD and dye-penetrant testing of rotary shafts of screens area
- VT, UFD and dye-penetrant testing of rotary shafts of multi separator area
- VT, UFD and dye-penetrant testing of rotary shafts of fan area

For the above-mentioned inspection services, following steps were adopted by NDT team to ensure the integrity of shafts:

- Preparation of procedures as per inspection scan plan
- Preparation of calibration blocks as per ASME code
- Preparation of demonstration block as per ASME code
- Demonstration of inspection procedure provided to client
- Discussion of results after NDT inspection with client
- Identification of defective shafts through UFD and DPT examination
- Recommendation provided for re-inspection of defective shafts to study propagation of defect

## Deliverables

- VT, UFD and dye-penetrant inspection report of rotary shafts of auto feed area.



**Client:**  
MPCL



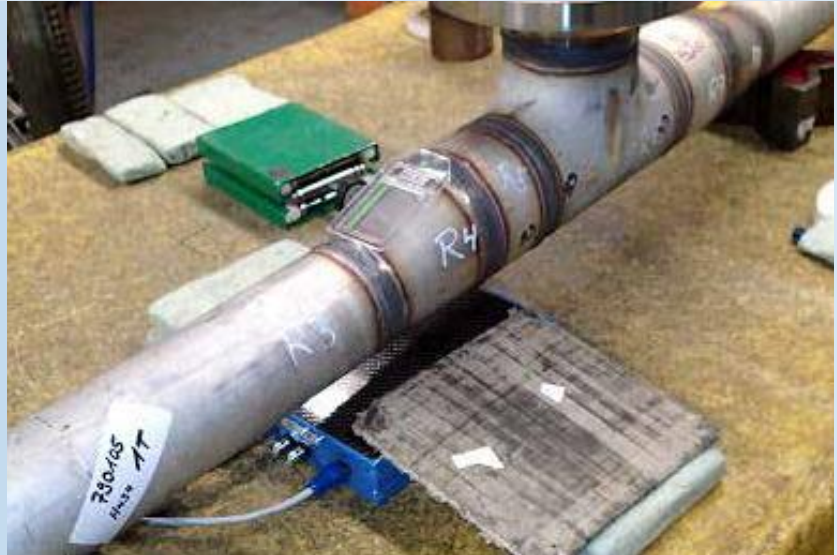
**Location:**  
Karachi, Pakistan



**Region:**  
South Asia



**Services:**  
Mechanical Integrity Assessment & NDT Services



## Objective

MPCL engaged Velosi at MPCL Zarghun Field to perform Mechanical Integrity Assessment (MIA) and Non-Destructive Inspections (NDT) of ZS4 piping to ensure the integrity of the welding for MPCL project.

## Scope of Work

The scope of MIA and NDT services include all longitudinal & circumferential welded joints.

Our following services performed by Velosi:

- Welding & Visual Inspection of the Piping joints.
- Dye Penetrant Inspection of the Weldolet Socket.
- Radiography of the Piping Joints.
- Radiography, pertain to Welder Qualification Tests.

## Deliverables

- Detailed NDT Inspection Reports
- Identification of welding defects
- Rectification and re-inspection of welding defects



**Client:**  
SNGPL



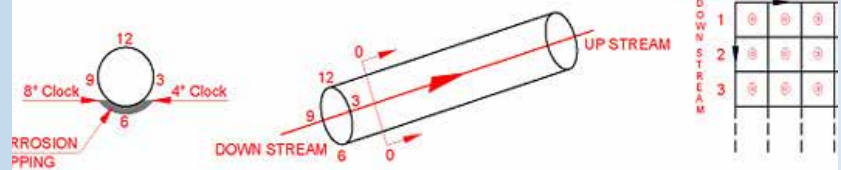
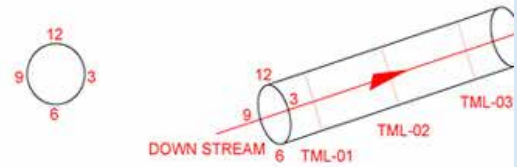
**Location:**  
Faisalabad, Pakistan



**Region:**  
South Asia



**Services:**  
NDT Inspection on High Pressure Pipeline Downstream of Compressor Stations



## Objective

The objective was to carry out the following NDT techniques on various segments of Pipeline operated by SNGPL in Faisalabad Region:

- 18" Dia Main Line, AC-7 / AV-38
- 24" Dia Main Line, AC-7 / AV-38
- 16" Dia Loop Line, A-11 / BV-3
- 16" Dia Loop Line, A-11 / CV-4
- 16" Dia Loop Line, BC-1 / B-2

## Scope of Work

The corrosion department of SNGPL proposed Velosi to assess the integrity status of its pipelines segments downstream of compressor stations by utilizing the following NDT Techniques:

- Ultrasonic Thickness (UT) Gauging along with Corrosion Mapping for internal corrosion loss.
- Magnetic Particle Inspection (MPI) for Stress Corrosion Cracking (SCC).
- In-Situ Metallographic Testing at selected points

## Deliverables

Velosi provided a comprehensive report at the completion of project with three hard copies along with one electronic copy of reports. The final report included the following:

- Inspection findings: defects and deviations
- Remedial actions to be undertaken for the redress of the same and guidelines to improve the ICCP monitoring and maintenance.





**Client:**  
MOL Pakistan Oil and Gas Co. B.V.



**Location:**  
Islamabad, Pakistan



**Region:**  
South Asia



**Services:**  
Visual, Dimensional Inspection & Hydrostatic Test Witness of Trim Boiler



## Objective

MOL Pakistan Oil and Gas Co. B.V. was appointed Velosi to perform quality assurance and quality control inspection services against at Descon Lahore Manufacturing Works, Punjab, for Visual and Dimensional Inspection and Hydro test Witness of Trim Boiler (E-308-04).

## Scope of Work

### Visual Inspection:

- Visual inspection of the surface of Trim Boiler (E-308-04), weld joints, design, nozzles, lugs, support fittings, baffles, impingement plates and tubes etc. for defects, cracks & notches.

### Dimensional Analysis:

- Dimensional check of shell, tubes and nozzles were measured as per drawings issued for fabrication.
- Thickness of shell, dish-ends and weld joints of nozzles measured with ultrasonic testing device.

### Documents Verification:

Document verification of the following provided by Descon Lahore was done:

- Drawings and Design
- Quality Inspection Plan
- Welding Documents
- Welders List & Certificates
- MTRs Summary Sheet and MTRs
- Dimensional Inspection Report
- NDT Reports (RT, UT, PT, MT)

### Hydrostatic Pressure Test

- Hydrostatic pressure test of shell side and tube side of trim boiler (E-3098-04) was carried out. Hydrostatic Pressure test of Shell side was carried out for 807 PSI and 671 PSI at ambient temperature of 33oC

## Deliverables

Complete analysis report with all the specifications and photograph evidence was submitted to client.


**Client:**

Mari Petroleum Company Limited (MPCL)


**Location:**

Islamabad, Pakistan


**Region:**

South Asia


**Services:**

Pre-shipment Inspections,  
NDT Inspections LEAA  
Services Trainings Valve  
Inspection



## Objective

The objective was to perform various pre-shipment inspections services for the below listed MPCL sites:

- Kadanwari Gas Field
- Sawan Gas Field
- Mehar Gas Field
- Dharki Site
- Pre-shipment inspection services in different countries

## Scope of Work

Our scope of work is to meet the requirement of client by providing TPI services on a regular basis for the following;

- Visual Inspection of Equipment
- Document Review
- NDT Services
- Valve Inspection
- QA/QC inspection
- Pre-shipment Inspection
- Lifting equipment inspection services
- NDT inspections
- API inspections

## Deliverables

- Detailed inspection reports after each site inspection.
- Technical Consultancy in execution & commission during different phases of the project.
- Technical manpower for quality control/quality assurance of NDT.
- Vendor surveillance services as per client requirement in different countries.
- Lifting equipment inspection reports as per international standard.
- API inspections reports as per standard.
- Hydro testing witnessing inspection reports of tank lorry and other equipment.
- Vehicle inspection reports as per client requirement.
- Tender & contract documents.
- Record Keeping



**Client:**  
SNGPL



**Location:**  
Karachi, Pakistan



**Region:**  
South Asia



**Services:**  
Local Pre-shipment  
Inspection



## Objective

Sui Northern Gas Pipelines Limited (SNGPL) was keen to purchase quality polyethylene Gas Pipes. For this, SNGPL engaged Velosi to perform pre-shipment inspection of polyethylene Gas Pipes manufacturing.

## Scope of Work

Our scope of work was to perform the following requirement of client and providing TPI services on a regular basis.

- Prior to start of production, quality of raw material are inspected to determine its usability.
- Inspect testing facilities of manufacturer prior to production
- Inspection activities at manufacturing facility strictly in accordance with the requirement of standard and technical specification.
- Inspect the production line for any defects.
- Assess production capabilities of manufacturer and process of production.
- Detailed conformance of technical specification of purchase order.
- Review mill test certificates/certificate of analysis.

## Deliverables

Velosi successfully submitted the following deliverables:

- Daily inspection report
- Daily conformance Report
- Loading supervision certificates
- Inspection release certificates
- Detailed documents pertaining to the source of raw material.
- Hydrostatic test reports
- Tensile test report
- Elongation test reports
- Melt Flow test
- Heat Reversion Test
- Material testing supervision
- Visual inspection of Polyethylene Pipe
- Dimensional inspection as per client specification
- Short Term Pressure testing
- Marking and packing
- Tensile Strength testing
- Density and Elongation
- Heat reversion
- Loading supervision



**Client:**  
GSK



**Location:**  
Karachi, Pakistan



**Region:**  
South Asia



**Services:**  
Risk Based Inspection



## Objective

The objective of this study was to conduct a risk based inspection assessment study for a total of 96 piping tags to:

- Establish corrosion loops and identify the dominant damage mechanisms.
- Perform risk assessment.
- Increase the safety of the plant by minimizing the risk.
- Inspection techniques and methods clearly defined based on thoroughly understanding of potential failure modes.

## Scope of Work

This Document covered RBI study for a total of 96 tags as stated and shortlisted in "Scope of Work Piping/Asset List" provided by GSK. The scope of work essentially covers but not limited to the following:

- Develop asset integrity management systems.
- Perform specific corrosion study for each facility including identifying damage mechanism and rate of deterioration.
- Develop corrosion loops and piping circuits to perform criticality assessment.
- Provision of integrity management support services
- Development and implementation of corrosion and inspection management systems by using VAIL Plant (RBI software), which include criticality analysis and inspection plan for all facilities

## Deliverables

Velosi successfully submitted the following deliverables:

- Corrosion & Inspection Strategy Document
- Corrosion Loop Drawings
- Inspection History Status
- Inspection History Findings
- Comparison of Corrosion Rates
- Corrosion Loop Asset Register
- PIR Criteria
- Risk Assessment Summary
- Risk Ranking Questionnaire Sheet
- Risk Ranking Summary
- List of Critical Assets
- Inspection Plan
- Generic Inspection Sketches
- Equipment and Piping Asset Register
- Assumption Table & Listing



**Client:**  
Pakistan Petroleum  
Limited (PPL)



**Location:**  
Karachi, Pakistan



**Region:**  
Middle East



**Services:**  
Risk Based Inspection



## Objective

The objectives of this study were to conduct a Risk-Based Inspection (RBI) assessment study for a total of 4877 tags as stated and shortlisted to:

- Establish equipment & piping corrosion loops and identify the dominant damage mechanisms
- Assess the risk
- Increase the safety of the plant by minimizing the risk
- Inspection techniques and methods clearly defined based on thoroughly understanding of potential failure modes

RBI methodology applied, steps followed, results, recommended improvements to manage the risk to acceptable industry levels and optimize future inspection. Key components of this document are the strategies required to effectively manage corrosion concerns for assets of Pakistan Petroleum Limited (PPL).

## Scope of Work

The scope of work essentially covered but not limited to the following:

- Development of asset integrity management systems.
- Perform specific corrosion study for each facility including identifying damage mechanism and rate of deterioration.
- Develop corrosion loops and piping circuits to perform criticality assessment.
- Provision of integrity management support services.

- Development and implementation of corrosion and inspection management systems by using VAIL Plant (RBI software), which includes criticality analysis and inspection plan for all facilities.

Equipment / Piping system under current RBI study has been selected from following plants of Pakistan Petroleum Limited (PPL):

- P-Plant Purification Plant
- DHP Dehydration Plant
- SFGCS Plant

## Deliverables

- Corrosion & Inspection Strategy Document
- Corrosion Loop Drawings
- Inspection History Status and Findings
- Comparison of Corrosion Rates
- PIR Criteria
- Risk Assessment Summary
- Risk Ranking Questionnaire Sheet and Summary
- List of Critical Assets
- Inspection Plan
- Generic Inspection Sketches
- Equipment and Piping Asset Register
- Integrity Operating Windows



**Client:**  
State Bank of Pakistan



**Location:**  
Karachi, Pakistan



**Region:**  
South Asia



**Services:**  
Design Review Services



## Objective

State Bank of Pakistan was planning to construct their regional offices in different cities of Pakistan to facilitate their local customer. The new buildings were constructed as follows:

- New Office Building At Gujranwala
- New Office Building At D.I.Khan
- New Learning Resource Centre And Allied Facilities at Peshawar
- New Office Building At Sialkot
- New Female Hostel At Lalazar Queens Road, Karachi
- New Office Building At Gawadar
- New Office Building At G-5 / 2 Islamabad

## Scope of Work

The scope of services was divided into four parts to be conducted in parallel and iteratively namely:

Review & Vetting of detail design of following:

- Civil Design (Architecture & Structure)
- Electrical (LV, MV, Lighting, Power, CCTV, Fire Alarm)
- Plumbing (Water Supply, Sewerage, Drainage)
- Mechanical (HVAC, BMS & Fire Fighting)
- Vetting of BOQ and Cost Estimates
- Vetting of Technical Specification
- Approval of Building Plans and Bidding Process

## Deliverables

### Architecture Design Review Report:

- Sections
- Elevation
- Door, Window & Schedule

### Structural Design Review Report:

- Soil Investigation Report
- Structure Design Analysis Report
- Structure Layouts
- Beam and Column Sections
- Structural Details
- Bar-Bending Schedule
- Bill of Quantities and Estimates
- Material Specifications

### Electrical Design Review Report:

- Electrical Design Calculations
- Single Line Diagram
- Power Layouts
- Single Line Diagram
- Lighting Layouts
- CCTV Layouts
- Fire Alarm Layouts

### Mechanical Design Review Report:

- EHVAC Design
- Building Management Services (BMS)
- Fire Protection and Fire Fighting Design

### Plumbing Design Review Report:

- Cold and Hot Water Supply Design
- Water Sewerage and Drainage Design
- Fire Protection and Firefighting Design



**Client:**  
State Bank of Pakistan



**Location:**  
Hyderabad, Pakistan



**Region:**  
South Asia



**Services:**  
Survey Detail Engineering  
Bid Evaluation Award of  
Construction Contract  
Resident Supervision



## Objective

State of Bank of Pakistan hired Velosi to conduct survey and identify detailed requirements of firefighting system and propose upgrades retrofits and additional safeguard features as required, prepare and design technical details of an intelligent micro-processor-controlled, addressable fire detection and emergency voice alarm communication system based on international best practices, NFPA standard/laws of Pakistan, relevant firefighting building codes.

Velosi was appointed to provide technical/operational details, user requirements and emergency evacuation arrangements in the form of SOPs for emergency procedures as well as SOPs for system operations and maintenance.

Prepare comprehensive bidding documents as per PPRA Rules covering necessary.

## Scope of Work

- Stage 01 - Time Schedule of the Project
- Stage 02 - Survey Report
- Stage 03 - Schematics & Cost Estimates
- Stage 04 - Detail Engineering (IFA)
- Stage 05 - Final Drawings & Documents
- Stage 06 - Tender Documents
- Stage 07- Bid Evaluation Report
- Stage 08 - Documents Submission
- Stage 09 - Contractor's Bill Verification

## Deliverables

- Site visits and data collection
- Review of available documents
- Review of maintenance records
- Preparation of survey checklists
- General assessment using the applicable international standards
- Assessment of Physical Condition of Firefighting System
- Assessment of Physical Condition of Fire Detection System
- List of Observations
- List of Recommendations



**Client:**  
Unilever ICF



**Location:**  
Lahore, Pakistan



**Region:**  
South Asia



**Services:**  
Safety Integrity Level  
Assessment & Verification



## Objective

Unilever Pakistan ICF wanted to execute SIL assessment and verification for all of its Safety Instrumented Functions at Ammonia and LPG circuits in its Ice Cream Factory, Lahore. Cause & Effect Diagrams (C&EDs) was also developed by Velosi.

## Scope of Work

The primary scope of services of Velosi includes:

- SIL assessment and verification for all of its safety instrumented functions at Ammonia and LPG circuits in its Ice Cream Factory, Lahore.
- Development of Cause & Effect Diagrams (C&EDs)

## Deliverables

- Minutes of Kickoff Meeting
- Summary of collected data
- Approved development plan for C&EDs
- SIL Classification and Verification reports (as per IEC-61508 & 61511 standards)
- SIL Assessment and Verification reports of SIFs





**Client:**  
SNGPL



**Location:**  
Lahore, Pakistan



**Region:**  
South Asia



**Services:**  
Technical Audit



## Objective

SNGPL hired Velosi to carry out a systematic and objective verification, analysis and appraisal of the operational functionality and performance evaluation of the system covering various aspects with respect to safety, management, documentation/data acquisition and control aspects of the system functions and operations of equipment/tools for company use. Velosi assured to meet the requirements of OGRA's License clause 28 issued to SNGPL.

## Scope of Work

The primary scope of services includes:

- Carry out the systematic appraisal and verification of function of the company.
- Compliance with relevant legislation, policies, standards and HSE measures in the company's areas of operation.
- Identify the areas of non-compliance with applicable standards and reasons thereafter.
- Schedule of maintenance and calibration of the various equipment and tools installed/used in transmission, distribution and compression system.

## Deliverables

- Detailed audit protocols
- Audit report that contains findings, analysis and assessment
- Recommendations

# Some of Our Clients

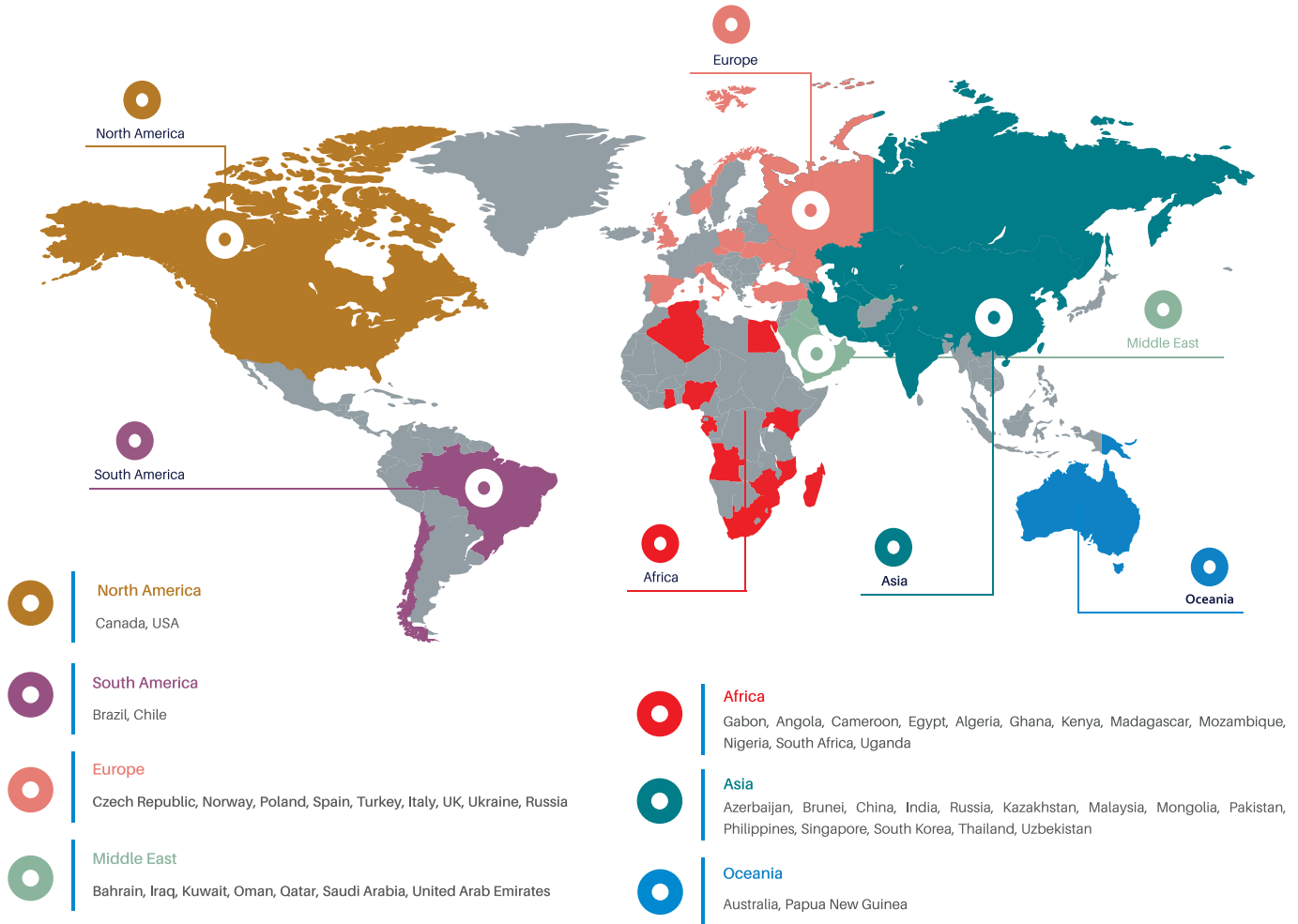
# **Velosi**

## Worldwide Existence

We operate globally through our associated offices in Africa, Asia, Europe, & Middle East. Our corporate office is in UK and Head office in UAE (Abu Dhabi). We have associated offices in 38+ countries worldwide. With local staff and local knowledge, we are uniquely positioned to support companies that need to control operations remotely or in unfamiliar territories.



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