



VAIL-Plant

ASSET INTEGRITY MANAGEMENT SOFTWARE

VELOSI 
Engineering For A Safer World



ENGINEERING FOR
A SAFER WORLD



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VAIL-PLANT

ASSET INTEGRITY MANAGEMENT SOFTWARE

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. This software centralizes the concept of digital twin by facilitating inspection, maintenance management cycles, and optimization through RBI, RCM, SIL, and FMECA approaches. VAIL-Plant is an effective asset management tool that contributes to ensuring the company's assets' health and performance by enabling the plant operators to improve overall control of their asset condition by analyzing, forecasting, optimizing inspection, asset monitoring, and linking to their maintenance systems. In return, making every process cost-effective and scalable in nature.

Through Digitalization VAIL-Plant sets forth extensive yet productive solutions to manage your assets. VAIL-Plant assists in maintaining history and records, evaluating asset conditions, identifying the highest risk assets, preventing plants from damage and corrosion, prioritizing and managing the efforts of an inspection program, and calculating the man-hour resources planning effectively.

VAIL Plant incorporates advanced analytical tools and machine learning with the concept of digital twin making a path for advanced digitalization to proficiently manage your assets.



VAIL-Plant Certifications

VAIL-Plant Software has been certified to meet the requirement of Industry Standards API 580, ASME B31.8S and IEC61508 Software Development requirement that ensures the integrity of Software. VAIL-Plant is also SAP-certified for Integration with SAP ERP System.



API 580: 2016

Risk Based Inspection
process compliance



ASME B31.8S : 2014

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



VAIL-Plant SAP Integration:

VAIL-Plant is certified to be
integrated with SAP S/4HANA
2021 using SAP Connector



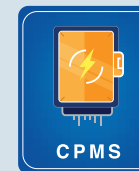
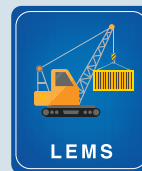
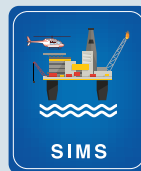
IEC 61508:

Software Development
Process Certification

PIPELINE INTEGRITY MANAGEMENT SYSTEM ONSHORE



VAIL-Plant PIMS Onshore module 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 display data on geographical maps (e.g. pipeline route, equipment location, pipeline sections).



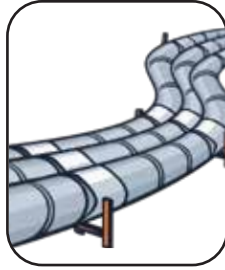
VAIL-PLANT MODULES



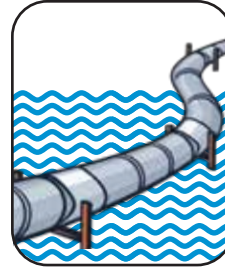
Asset Performance Management System



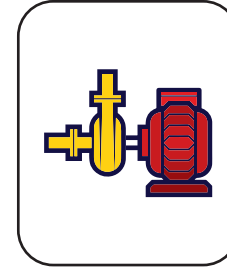
Pressurized Equipment Management System



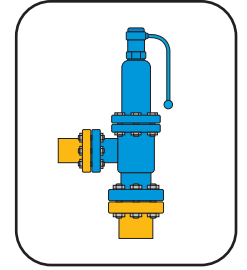
Pipeline Integrity Management System Onshore



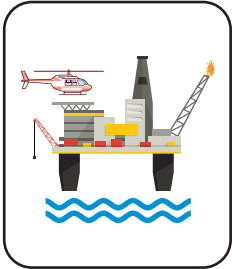
Pipeline Integrity Management System Offshore



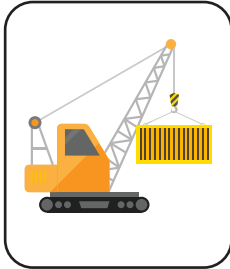
Electrical, Instrumental & Rotary Management System



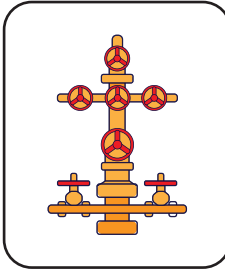
Pressure Safety Valve & Relief Valve Management System



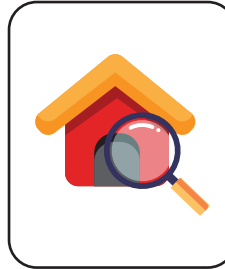
Structure Integrity Management System



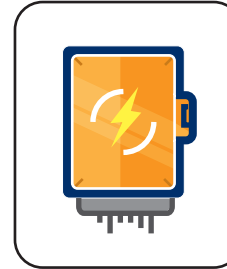
Lifting Equipment Management System



Wellhead Integrity Management System



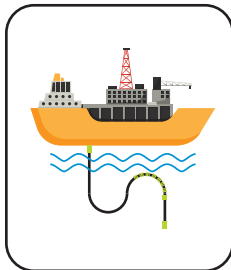
Civil Integrity Management System



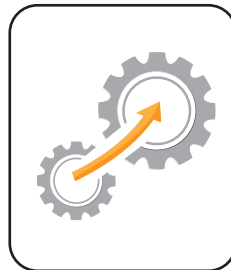
Cathodic Protection Management System



Hull Integrity Management System



Flexible Pipeline Integrity Management System



Enterprise Resource Planning Interface



Inspection Scheduling Management System



Computerized Maintenance Management System



Control Panel

VAIL-PLANT ASSET INTEGRITY MANAGEMENT SOFTWARE

Touch Points:



Modular Approach - different modules specific to user requirements.



Root Cause Analysis to handle the analysis of different types of failures.



Hierarchy Recording and Management.



Equipment Inspection, Maintenance, Failure, and Replacement History management.



Asset Performance Management - Graphical Dashboard overview.



Identification and Evaluation of Integrity KPIs (Inspection and Maintenance).



Equipment Condition Monitoring.



Risk Matrix Configuration.



Covers a wide range of equipment types: Pressure vessels, columns, drums, process piping, pipelines, lifting equipment, electrical/instrumentation & control systems, steel structures, rotating equipment, hull/FPSO, wellheads and cathodic protection).



Facilitates the process of Risk Based Inspection, Reliability Centered Maintenance, Failure Mode Effects & Criticality Analysis, Safety Integrity Levels and Safety Relieve Management.

VAIL-PLANT ESSENTIALS

Following features of VAIL-Plant application are available for each module:



Inspection Maintenance

- Workflow configuration for Inspections.
- Customizable inspection/maintenance business process.
- Inspection management with identified user roles.
- Integrity Operating Window (IOW).



Integration

- ERP Integration with SAP, MAXIMO, Infor EAM, Oracle ERP, EPICOR ERP etc.
- Integrated with Arc GIS to display Geographical Data.
- Interface with Inspection Data logger, Outlook, AutoCAD, Third party RBI software and Active Directory.
- Integrated with Mobile Application for Inspection.



Reporting

- Reporting Trends (Risk Levels, Leaks, Failures, Remnant Life, Corrosion Rates, Replacements, etc.).
- Standard Reporting.
- Ad-hoc Reporting.
- User list View with Graphical Representation.



Search and Custom Query

- Flexible Form Based search functionality with full text and wild card Search.
- Custom Query functionality with user defined criteria on an ad-hoc basis.



Document Interface

- Reference Libraries (P&ID's, PFD's, Sketches, SOP's, Manuals, Isometrics, etc.).
- Interface with Document Controllers (SharePoint, Envision, OmniDocs, etc.).
- Drawings Management (Sample Sketch Isometrics, GA Drawings, PFD Drawings, etc.).



Data Reliability

- Overall Management Dashboards.
- Bulk Loading.
- Data Importing/Exporting Templates.
- Data Security, Role-based Security.



Digital Twin

- Increasing Overall Agility.
- Replacing & Innovating Outdated Legacy Systems.
- Criticality Assessment of Assets with Advanced Automation Tools.
- Eliminating Disparate Data Streams.

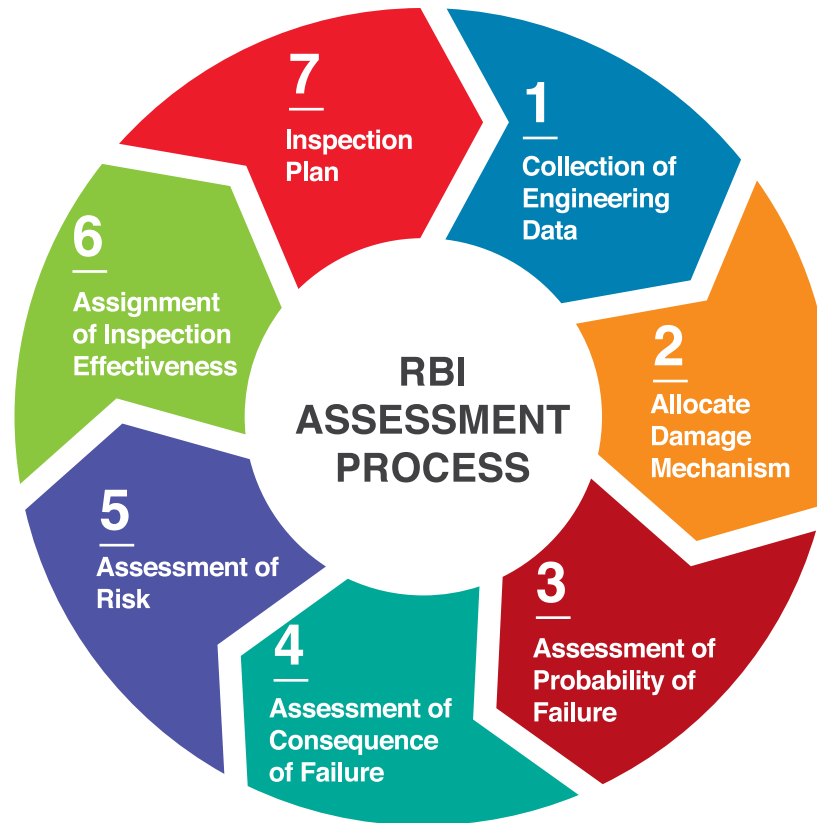
RBI ASSESSMENT PROCESS

1 Collection of Engineering Data for each component.

2 Allocate Damage Mechanisms for every component.

3 Assessment of Probability of Failure (PoF) based on questionnaire specific to each damage mechanism.

4 Assessment of Consequence of Failure (CoF) based on questionnaire for each of the consequence categories: Business, Safety, Reputation, and Environment.



5 Assessment of Risk for each component by looking up the PoF and maximum CoF on the Risk Matrix.

6 Assignment of Inspection Effectiveness score and rating to each component based on a questionnaire.

7 Calculation of Next Inspection Date from Equipment Risk, Inspection Effectiveness, Historical Corrosion Rates, and remnant life.

VAIL-Plant modules covering RBI Assessment Process:

Pressurized Equipment Management System (PEMS)

Pipeline Integrity Management System Onshore (PIMSON)

Pipeline Integrity Management System Offshore (PIMSOFF)

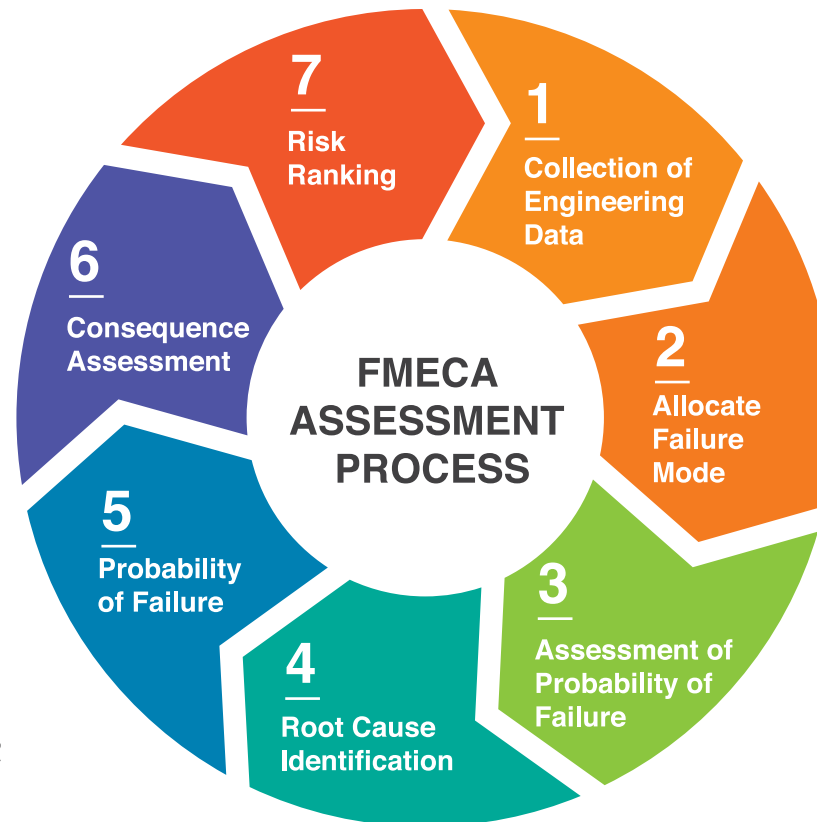
Civil Integrity Management System (CIMS)

Hull Integrity Management System (HIMS)

Structure Integrity Management System (SIMS)

FMECA ASSESSMENT PROCESS

- 1** Collection of Engineering Data for each component.
- 2** Allocate Failure Modes for every joint.
- 3** Assessment Probability of Failure (PoF) to shortlist the failure modes to be considered in the FMECA ability and consequence assessment is carried out.
- 4** Every failure mode is analyzed with respect to its effects and consequences. Subsequently, it is assigned Problem code, damage code, PMR and recommendations are given.



- 5** Every failure mode is assigned a Probability of Failure(PoF).
- 6** Every failure mode is assigned a consequence value for safety, business, environment, and capital aspects. Subsequently, it is assigned a maximum Consequence of Failure (CoF).
- 7** A Risk Rank is calculated for each failure mode and subsequently for the equipment.

VAIL-Plant modules covering FMECA Assessment Process:

Pressure Safety Valve & Relief Valve Management System (PSVMS)

Electrical, Instrumental and Rotary Management System (EIRMS)

Well Integrity Management System (WIMS)

Lifting Equipment Management System (LEMS)

Cathodic Protection Management System (CPMS)

Flexible Pipeline Integrity Management System (FPIMS)

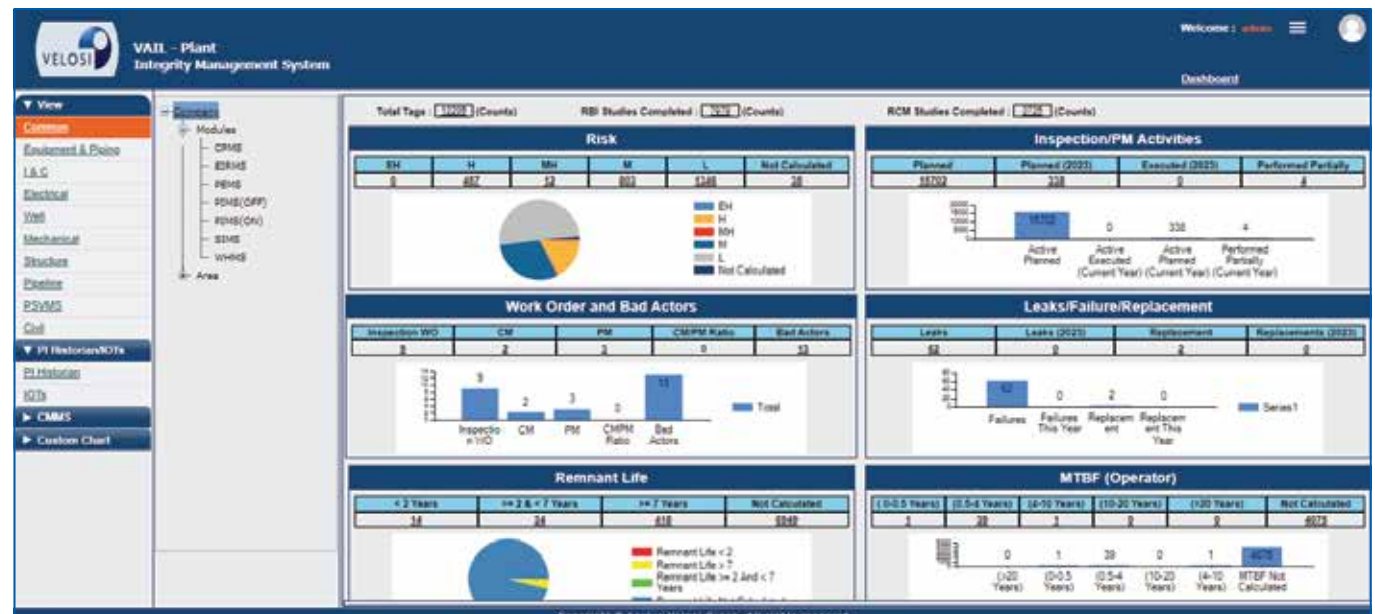
ASSET PERFORMANCE MANAGEMENT SYSTEM (APMS)



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.

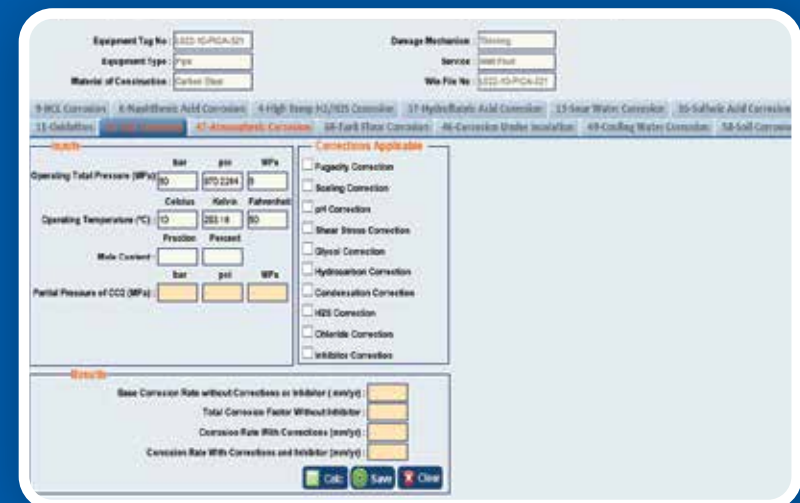


PRESSURIZED EQUIPMENT MANAGEMENT SYSTEM (PEMS)

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

Module contains following main features:

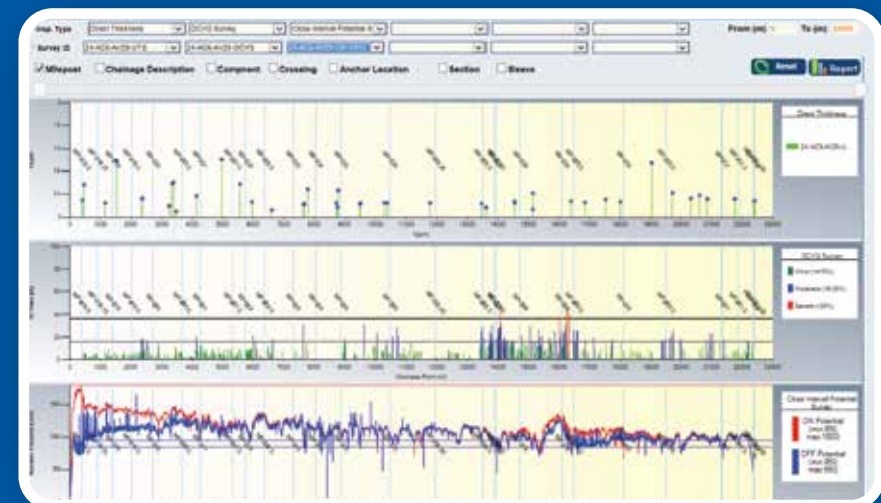
- Engineering data capturing along with Hierarchy Management and capturing of Drawings, Isometrics, PFD's and P&ID's.
- Inspection History Recording with respect to multiple positions and TML's.
- Semi quantitative RBI methodology for risk evaluation and inspection planning against identified damage mechanisms compliance with API 580.
- Estimated Corrosion Rate Models based on API 581.
- Failure and replacement history recording.
- KPI's identifications & calculation/ evaluations.
- Short/Long Term Corrosion Rate and Remnant Life Calculations.
- Plant Inspection Requirements (PIR's) generation.
- Root Cause Analysis (RCA) against failures.
- Time, Cost & Resources (CTR) Management.
- Data importing from excel workspace templates.
- Drawings Management.
- Graphical Trends.
- Effective Reporting.
- Custom Query.



Module contains following main features:

- Pipeline Profile Recording & Plotting.
- Risk Assessment against third party damages.

- Probability of Failure (PoF) calculation and plotting along the pipeline (PoF Vs TIME) against applicable damage mechanism.
- Consequence 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 damages.
- Corrosion calculation (NORSOK M-506).
- Scheduling of Integrity Management and Inspection.
- Defect Assessment based on B31.G, Modified B31.G & Shell 92.
- Drawings Management.
- Graphical Trends.
- Effective Reporting.



ELECTRICAL, INSTRUMENT AND ROTARY MANAGEMENT SYSTEM (EIRMS)

VAIL-Plant EIRMS module is based on standards BS 60812, IEC 60812, SAEJA 1011 & SAEJA 1012 and facilitates Reliability Centered Maintenance (RCM) and is capable of maintaining and organizing maintenance records and details of equipment such as Engine, Generators, Transmitter and Pressure Gauge etc. The hierarchy of data is based on ISO 14224.



Module contains following main features:

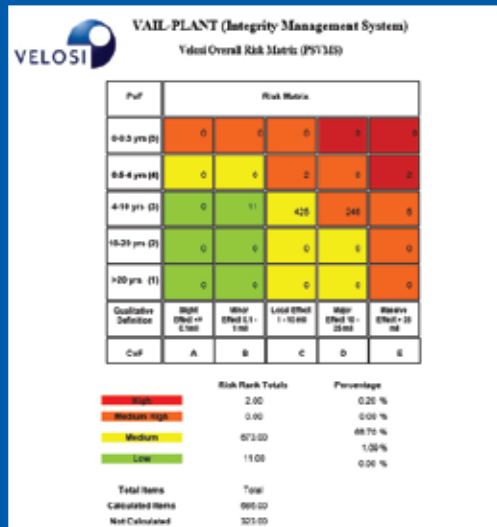
- Mean Time Between Failures (MTBF) and Mean Time To Repair (MTTR) calculations.
- Failure Mode, Effect and Criticality Analysis and their Criticality Matrix.
- Reliability Operator and Reliability Generic Data Recording.
- Hierarchy Recording and Management.
- Design/Operational Data Capturing.
- Functional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

PRESSURE SAFETY VALVE MANAGEMENT SYSTEM (PSVMS)

VAIL-Plant PSVMS module is based on API 576 and API 527 technology. It facilitates FMECA Assessment of different PSVs/ PRVs and is capable of maintaining & organizing Maintenance records, Datasheets, Drawings, Specification and Inspection Plan of Safety Relief Devices.

Module contains following main features:

- Integrity Management Dashboard to view overall Inspection Status for all the assets.
- Structural Hierarchy Management.
- Design Engineering Data Management.
- RBI Analysis for PSV's.
- Identification of Failure Mode.
- Failure Modes Effects Criticality Assessment.
 - Failure Mode.
 - Failure Effects.
 - Development of Risk Matrix for Safety, Environment and Economy.
 - Influencing factors/ causes/ maintainable items.
 - Generic Failure Data.
- Risk Evaluation for each Identified Scenario.
- Inspection Planning and Risk Management.
- Determination of PoF & CoF.
- Inspection History Recording.
- Failure and Replacement History Recording.
- Cost, Time & Resource management.
- Drawings Management.
- Graphical Trends.
- Effective Reporting.
- Custom Query.



STRUCTURE INTEGRITY MANAGEMENT SYSTEM (SIMS)



VAIL-Plant SIMS module facilitates the Risk Based Inspection and Inspection Planning of structures like Onshore and Offshore steel structures. Based on Industry Standards AISC and API RP2 SIM, this module enables the operator to perform Risk Based Inspection and Inspection Planning of Structure.

Module contains following main features:

- Maintains the hierarchical tree to provide better understanding of the structure's components according to their levels.
- Complete history recording of previously done inspections.
- Plant Maintenance Routines and Logistics Requirements.
- Facility Information.
- RBI Assessment.
- FMEA Analysis.
- Inspection Management.
- Inspection Flow Management.
- Drawings Management.
- Graphical Trends.
- Effective Reporting.
- Custom Query.

VAIL - Plant Integrity Management System

Structure Integrity Management System

Company: [Company] Sub Structure Tag: [OFSP-B001-B1-SP2-LB1-A1-B1] Component Type: [Node]

Platform: [Block 1] Equipment No.: [OFSP-B001-B1-SP2-LB1-A1-B1] Component Class: [Node]

Structure Zone: [Splashzone] Structure Code: [B1-S-LB1] Component Code: [N]

Structure: [Module B1 Jacket] Structure Type: [Primary] Member Code: []

Sub Structure: [Module B1 Jacket Leg B1] Component ID: [LB1-A1-B1]

Probability of Failure

Fatigue Analysis:	Medium	10
Accidental Damage:	Medium	20
Anomalies:	Low	5
Corrosion Risk:	High	100
Confidence Assessment:	Low	20
Utilization Factor:		
PoF Over All:		200

Consequence of Failure

Consequential Damage:	1	Low
Risk To Life:	2	Low
Risk To Environment:	20	Medium
Risk To Production:	1	Medium
Cost of Repair:	20	Medium
CoF Over All:		48

Other Metrics:

Fatigue Damage:	
Fatigue Location:	
SVC Life:	6
System Factor:	0.4
Criticality Rating:	1774.5
Criticality category:	Medium
Inspection Priority:	4
Inspection Frequency:	72

Pending Records

PoF Over All: 195 CoF Over All: 48 SVC LIFE: 6 Fatigue Damage: System Factor: 0.4

Total Tags: 1 of 8053

LIFTING EQUIPMENT MANAGEMENT SYSTEM (LEMS)

VAIL-Plant LEMS module has been developed to inspect the status of Lifting Equipment e.g. Crane, Clamps, Forklifts, Hoists etc. in Oil and Gas Industry. Based on industry standard API 2C, this module provides a lifting gear inspection checklist thus making it easier for the operator to carry out lifting equipment testing.

Module contains following main features:

- Organization of a systematic hierarchy using two approaches – Plant wise as well as Discipline wise.
- Maintenance of reliability model to estimate the failure frequency and trends of lifting equipment.
- Assessment of equipment operator historical data/Generic reliability data.
- FMECA Assessment which focuses on:
 - Primary and Secondary Functions
 - Total or Partial Functional Failures
 - Failure Modes.
 - Failure Effects.
 - Failure Characteristic (age or not age-related failures).
 - Failure Classification (Hidden or evident).
 - Influencing Factors (root causes).
 - Failure Criticality on Safety, Environment, Production and Capital.
- Operator Historical Data vs Generic Reliability Data comparison.
- Generation of PMR (Preventive Maintenance Routines).
- Production of maintenance & inspection recommendations to reduce the possibility of occurrence.
- Comprehensive checklists for most types of lifting equipment to facilitate Inspections.
- History Maintenance & calculation of MTBF and MTTR based on failures & replacements.
- Drawings Management.
- Graphical Trends.
- Effective Reporting.
- Custom Query.



WELLHEAD INTEGRITY MANAGEMENT SYSTEM (WHIMS)



VAIL-Plant WHIMS module equips the organizations with the facility to manage the risk of loss of good containment over the well lifecycle. Based on API SPEC 6A, WHIMS module enables the operator to perform FMECA analysis and Inspection Planning of various wellhead equipment.

Module contains following main features:

- Hierarchy Recording and Management.
- Design / Operational Data Capturing.
- Functional Data Recording.
- Reliability Operator and Reliability Generic data Recording.
- Failure Mode and Effect Analysis based on equipment type.
- Failure Mode, Effect and Criticality Analysis and their Criticality Matrix.
- Plant Maintenance Routines (PIR) generation.
- Work Order and Work Packs Generation.
- Inspection History Recording.
- KPI Calculator.
- Maintenance History Recording.
- Failures and Replacements Recording.
- Mean Time between Failures (MTBF) and Mean Time to Repair (MTTR) calculation.
- Drawings Management.
- Graphical Trends.
- Effective Reporting.
- Custom Query.

VELOS VAIL - Plant Integrity Management System

WellHead Management System

Welcome : admin Dashboard

Form View Engineering Data FMECA Analysis Risk Matrix PIR History Records Condition Monitoring List View Reports Custom Query Ref Docs

Company: ATMOSPHERE FLARE/VEH BATTERY AND (UPS) EHE BATTERY AND NO BREAK BLACK AND GREY WATER CLOSED DRAINS SYSTEM DIESEL FUEL SYSTEM DRILLING EFFLUENT SYS BATHING AND LIGHTING EMERGENCY SHUTDOWN EMERGENCY/ESSENTIAL ESCAPE AND PERSONAL FIRE AND GAS DETECTIC FIRE WATER SYSTEM FIREWATER SYSTEM FOAM AND DRY CHEMICAL FOAM AND DRY CHEMICAL HAZARDOUS OPEN DRAIN HEAT TRACING SYSTEM HEATING MEDIUM (HOT) HP FLARE SYSTEM HVAC SYSTEM INERT GAS SYSTEM NUTRIENT/IMPACT AIR SYSTEM

Pending Records

Approved

Equipment ID: 2821
Analysis Owner: Company
Maintenance Plant: CPSP
System Name: CLOSED DRAINS SYSTEM
System Code: CPSP-ST
Discipline: MECHANICAL
Wellhead No.: CPSP-ST-P-138-1
Equipment Tag No.: CPSP-ST-P-138-1

Equipment Type: PUMP CENTRIFUGAL
Eqt. Description: PUMP CENTRIFUGAL DRAIN
Object Type: PUCB
Object Type Desc: PUMP CENTRIFUGAL
Name: EXTENDED FMECA ANALYSIS
Sub Object Type: State: Draft Stand by: No

BCE Group: CPSP-ST-P-138-1

Risk: Safety: Low Environment: Low Business: Low Capital: Low Overall Risk: Low Company Risk: Low Criticality: Low

Engineering Data: Engineering Data for Specific Equipments

HSCE/SCE Group: HSCE/SCE Sub Group: Service Start Date: 1/1/2007 Functional Location: CPSP-ST-P-138-1 Description of FL: PUMP CENTRIFUGAL DRAIN TANK CPSP Service: DRAINAGE Material of Construction: CARBON STEEL PFDs: NPSF-152-PA-PFD-000_REV0 P&ID Number: NPSF-275-PA-PID-014-Rev0 DT 138 Remarks: Manufacturer: BULZER Model Number: TMC 80-180

Reliability Data: Operator

Failure Rate: 10^-6 Hrs: 17.68

Mean Time Between Failure (MTBF): Last Failure Date: 15/4/2016 No. of Failures to Date: 2 MTBF (Hrs): 55000.0 MTBF (Yrs): 0.30

Mean Time to Repair (MTTR): Last Maintenance Date: 15/4/2016 No. of Overhauls to Date: 2 Total Down Time (Hrs): 2 MTTR (Hrs): 1.5

[Note : This reliability data is for current equipment.]

1 of 3100

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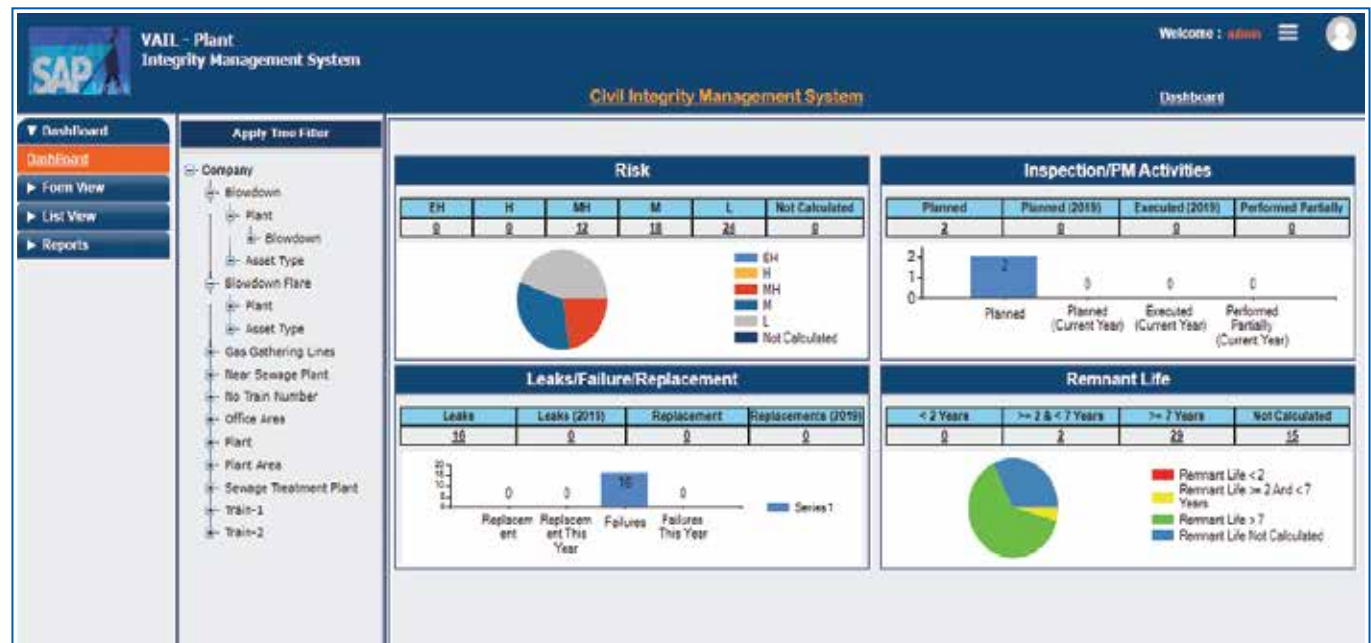
CIVIL INTEGRITY MANAGEMENT SYSTEM (CIMS)



Based on standard SEI/ASCE 11-99, VAIL-Plant CIMS module is dedicated for assessment and inspection management of civil natures like Concrete Structures, Pipe Sleeper, Flare, Water Well, Fencing, Culvert, Foundations, Roads & Paving, Buildings and Pipe Track Foundation, etc.

Module contains following main features:

- Engineering and layout information of all civil nature.
- Maintains the hierarchical tree to provide better understanding of the civils' components according to their levels.
- Defect Assessment, Risk Ranking and recommended repairs.
- Calculation of total defected area, estimated man-days & their cost and overall cost for the recommended repairs.
- Inspection Planning & logistics requirements.
- Complete history recording of previously done inspections.
- Drawings Management.
- Graphical Trends.
- Effective Reporting.
- Custom Query.



CATHODIC PROTECTION MANAGEMENT SYSTEM (CPMS)

Based on NACE, VAIL-Plant CPMS module maintains the Engineering Data and allows the operator to perform Risk Assessment and Inspection Management for different types of Cathodic Protection (CP) equipment such as Transformer-Rectifiers, Ground Beds, Anode Junction Boxes, Test Points, and Coupons, etc.

Module contains following main features:

- Dashboard for Management Review
- Seven levels Hierarchical Tree for CP System database
- CP System Design and Construction database
- Manages multiple types of CP inspection and surveys
- Schedules Routine Field Data Test & Monitoring
- Graphical Display for Quick View, and Trend Analysis
- Failure Mode Effects and Criticality Analysis (FMECA)
- Plant Maintenance Routines (PMR) generation
- Drawings Management.
- Graphical Trends.
- Effective Reporting.
- Custom Query.

The image displays the VAIL-Plant Cathodic Protection System (CPMS) software interface and a photograph of a person using a handheld device to inspect equipment.

Software Interface:

- Dashboard:** Shows various metrics and a hierarchical tree structure on the left.
- Equipment Data Entry Form:** Includes fields for Equipment Tag No., Wkt File No., Equipment Type, System Name, TR ID, TR Component, Serial Number, Company, Area, Plant, Commission Leap, and Equipment Description.
- CP Inspection Transformer Form:** Includes fields for Inspection Date, DC Output Amp, AC Output Volt, DC Output Volt, AC Input Volt, Phase, Risk, Remarks, Efficiency, and Comments.
- History Table:**

Inspection Date	TR Tag	Setting Position	DC Output Amp	DC Output Volt	AC Input Amps	AC
11-Jun-2010	Data not provided		29.8	8	1	41
28-Jun-2010	Data not provided		28.1	3.8	1	41
10-Jun-2010	Data not provided		30.8	4.2	1	41
- Minimum Operating Status:** Includes fields for Efficiency Level and Risk Condition.

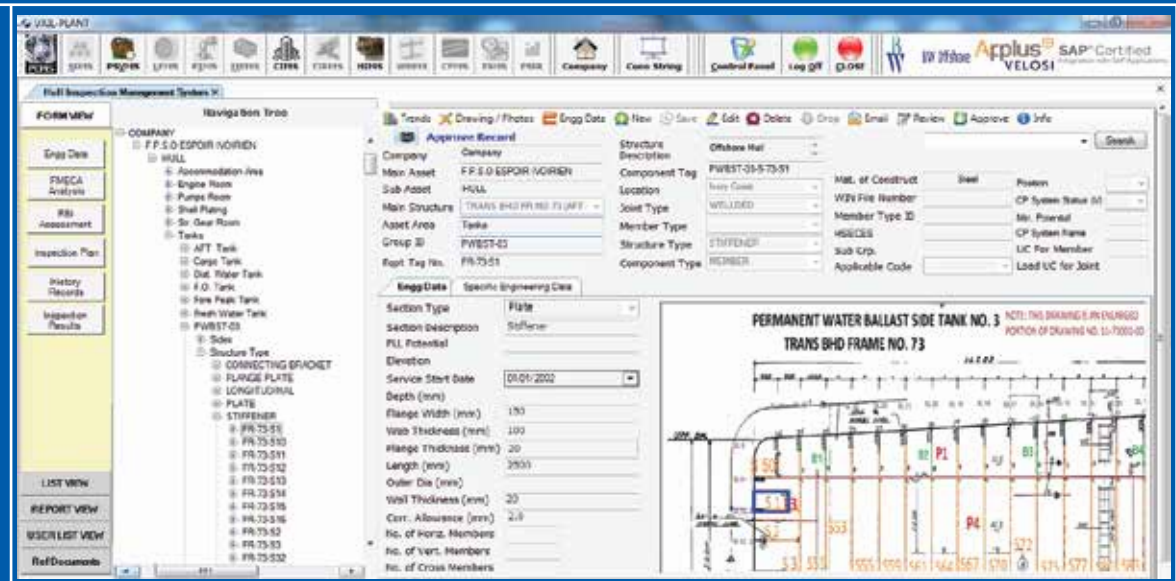
Handheld Device: A person is using a handheld device to inspect equipment, likely a Transformer-Rectifier (TR) Unit, as indicated by the label "30-CP-TRN-0001" in the background.

HULL INTEGRITY MANAGEMENT SYSTEM (HIMS)

VAIL-Plant HIMS module provides a rationalized approach to perform inspections of Hull structure and identifies the general and critical area for inspection activities. It is based on industry standards DNV-OSS-102, DNV-OSS-103 and DNV-OSS-304.

Module contains following main features:

- Six inspection criteria (Coating Condition, General Condition, Pitting/Grooving, Deformation Fractures and Cleanliness) have been identified for each compartment & these are inspected for each zone.
- Compartments are divided into zones for inspection and grading of inspection criteria.
- Identification of Critical structural areas for a compartment/zone based on engineering analysis and in-service experience.
- The inspection criteria are graded with a score (rating) from 0 to 5. The scores are added for each zone and rolled up to get a normalized score for the compartment.
- Capability to identify the general inspection activities and inspection activities for critical areas.
- Damage Mechanisms Identification for each zone & Risk Evaluation.
- Inspection, Maintenance, Replacements, and Failure History Recording.
- Hull Inspection Routines (Inspection Packs) definition and execution.
- Drawings Management.
- Graphical Trends.
- Effective Reporting.
- Custom Query.



FLEXIBLE PIPELINE INTEGRITY MANAGEMENT SYSTEM (FPIMS)

VAIL-Plant FPIMS module allows to specifically to manage and process information regarding flexible pipeline's risk assessment and inspection planning. This module is based on API 17J and helps to assess the integrity of the pipeline and its immediate threats.

Module contains following main features:

- Identification of Degradation Mechanisms with reference to API 17B for exhaustive list of failure modes and possible defects for flexible risers.

- Division of Flexible Pipeline into subsystems and degradation loops.
- Probability of failure and consequences for each equipment.
- Evaluation of the impact of changes in process conditions and materials on installation risk and inspection program.
- Risk Analysis for each degradation mechanism.

- Determination of Confidence Grading.
- Development of detailed inspection plan.
- Risk Analysis of Flexible Pipeline.
- Drawings Management.
- Graphical Trends.
- Effective Reporting.
- Custom Query.



The screenshot displays the FPIMS software interface with the following sections:

- Form View:** Includes tabs for Basic Details, TMCA, Risk Assess, Inspection Plan, History Records, Inspection Results, and Pending Records.
- General Records:** A tree view showing a hierarchy of records, including 'Flexile Riser' and 'ASME-21'.
- Asset Details:** Fields for Company, Project Name, Structure Name, Parent Asset Type, Material, and Material Grade.
- Search Component:** Fields for Search Component, Search, and Search Results.
- Environmental Data:** Tables for Highest Astronomical Tide (m), Lowest Astronomical Tide (m), Surge for 1 yr (m), Surge for 100 yrs (m), Min. Sea Water Temp. (°C), Max. Sea Water Temp. (°C), Min. Sea Floor Air Temp. (°C), and Max. Sea Floor Air Temp. (°C).
- Wave Data:** Tables for Significant Wave Height 1 yr (m), Significant Wave Height 100 yr (m), Spectral Peak Period Wave Data 1 yr (s), Spectral Peak Period Wave Data 100 yr (s), Max. Wave Height 1 yr (m), Max. Wave Height 100 yr (m), Max. Wave Period 1 yr (s), and Max. Wave Period 100 yr (s).
- Current Velocity (m/s):** A table showing velocity values for different depths (1 yr at surface, 100 yr at surface, 1 yr at 50m, 100 yr at 50m, 1 yr at 60m, 100 yr at 60m).

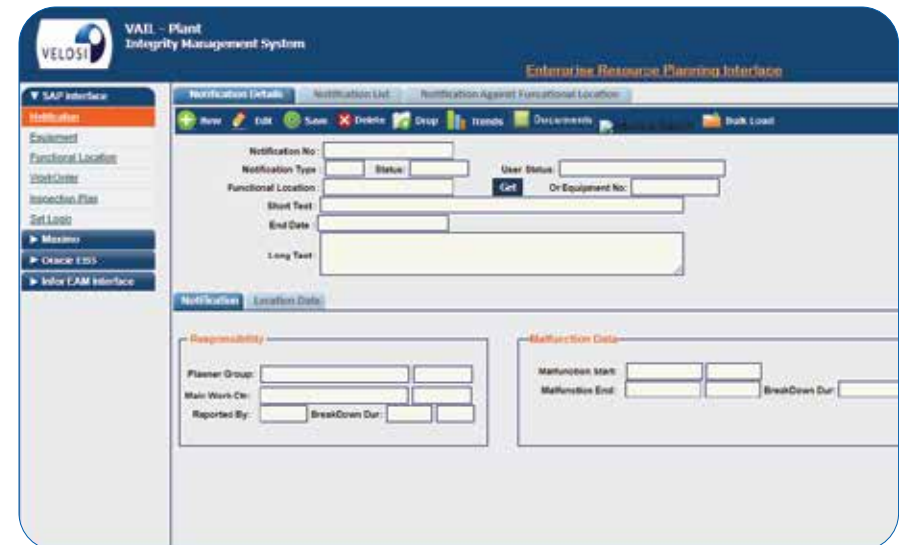
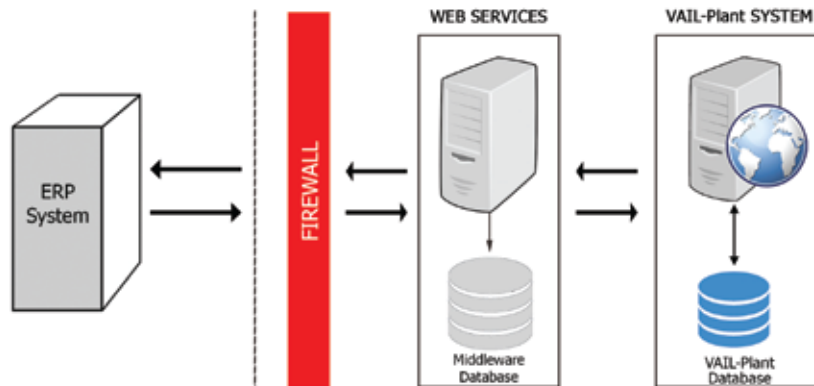
ENTERPRISE RESOURCE PLANNING INTERFACE (ERPI)

VAIL-Plant ERPI module allows the organizations to interface with other ERP software systems that they use to manage their business. VAIL-Plant ERPI System provides an interface to link with external applications very easily allowing the operator to exchange data, update and share information.

Module contains following main features:

- VAIL-Plant can be fully integrated with ERP software such as Oracle, SAP, InforEAM and MAXIMO.
- VAIL-Plant has been certified for integration with SAP ECC 6.0 based on ICC integration assessment in SAP PLM.
- VAIL-Plant can be integrated with Document Management System to exchange data.
- VAIL-Plant can be integrated with any third party RBI software to compare RBI results.
- VAIL-Plant Pipelines is integrated with Arc GIS and has the capability to display geographical data.
- VAIL-Plant has the capability to be integrated with Inspection Data logger: ULTRASONIC THICKNESS GAUGE (38DL PLUS).
- VAIL-Plant supports full integration to MS Office - Excel, Word Export/Import, and PDF Documents.

VAIL-Plant CMMS Integration



INSPECTION SCHEDULING MANAGEMENT SYSTEM (ISMS)

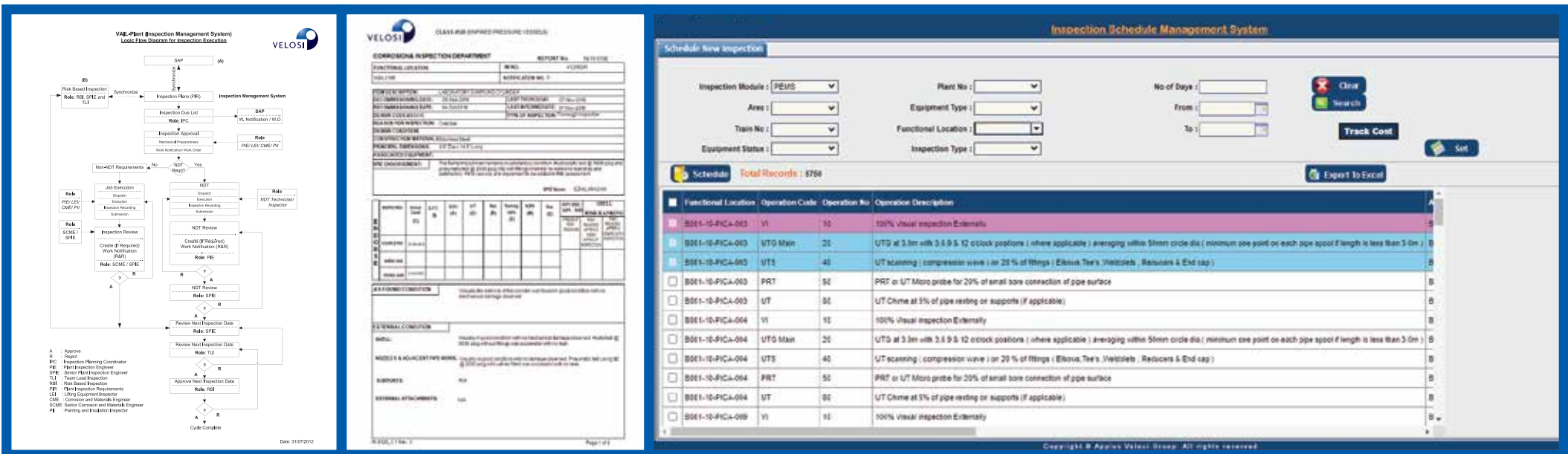
VAIL-Plant ISMS module coordinates with other VAIL-Plant modules to facilitate their Inspection planning and recordings. With ISMS, operator can schedule and execute inspection schedules generated while documenting the inspections to create work orders.

Module contains following main features:

- Capable to manage inspection activities for all types of assets/ equipment (tags). The system allows performing inspections on groups of tags, platforms and corrosion loops.

- Allows users to plan, schedule and execute PIR's. It automatically extracts inspection plans from CMMS such as SAP.
- Allows users to create work scopes, work packages for execution of PIR on a tag or a set of tags (package like boilers, pipe). Drawings, documents, specifications, previous history schedule date, previous readings, previous anomalies etc. summarized in one document.
- Allows Reviewers and Approvers to enter remarks and comments and preserves the history of these remarks.

- Allows the 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.
- Comprehensive configuration ability to allow users to configure the system to adapt it to organizations' processes.
- Color coding to have a one-look summary of the status of inspections.

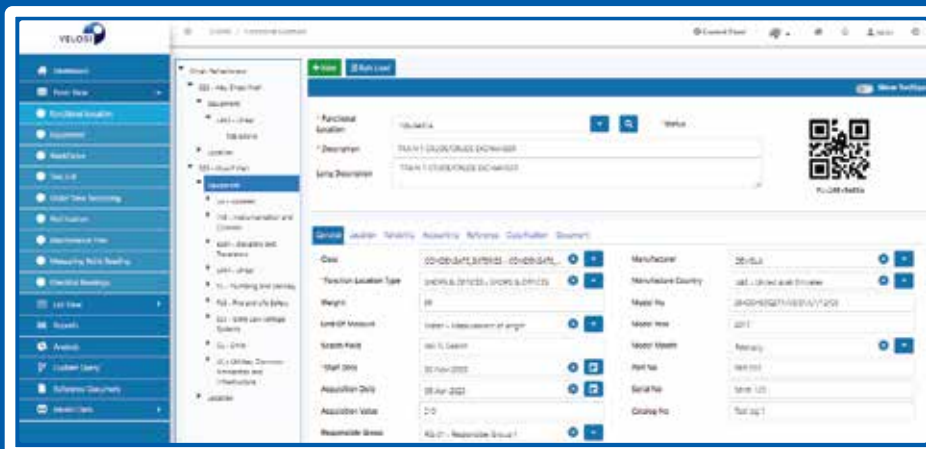


COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM (CMMS/CAFM)

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:

- Work Order Management: Allows users to create, assign, and track maintenance tasks.
- Asset Management: Assist organizations to track and manage their physical asset.
- Inventory/Spare Parts Management: Allows users to track and manage spare parts and other materials needed for maintenance tasks.
- Scheduling & Dispatch: Helps organizations schedule & assign maintenance tasks to the appropriate personnel.
- Preventive Maintenance: Set up & track maintenance schedules for assets. Minimize costly repairs, poor production, and negative customer feedback.
- Lease & Contract Management: Route and manage leases and contracts for facilities, equipment, and other assets.
- Resource Scheduling: CAFM/CMMS systems may include tools for scheduling and managing the use of resources.
- Mobile access: Mobile apps/other tools allows users to access the system from their phones or other devices, making it easier to manage facilities remotely.
- Reporting & Analytics: Provides a range of reports and analytics to help organizations understand their maintenance operations.
- Integrations: The software supports integrations with other systems, such as enterprise resource planning (ERP) or enterprise asset management (EAM) systems.



VAIL-PLANT

CASE STUDIES





CASE STUDY INSPECTION MANAGEMENT SYSTEM



Client:
ADNOC LNG



Location:
Abu Dhabi, UAE



Region:
Middle East

SERVICE(S):

Software Services

OBJECTIVE:

ADNOC LNG intends to appoint a contractor to supply a customized Inspection Management System software package, assist the user department to migrate and clean up the existing inspection and other relevant data, train the user department on administering the system, installation of the system and provide post implementation maintenance and support of the system.

SCOPE OF WORK:

The services included, but not limited to the followings;

- Supply an off-the-shelf software package for the Inspection Management System.
- Customization of the software package to meet the user requirements.
- Assist users to clean up and migrate the existing inspection and other relevant data.
- Train the users in using/administering the system.
- Provision of services for installation of the system.
- Post implementation maintenance and support of the system.
- Documentation



DELIVERABLES

Velosi successfully submitted the following deliverables:

- VAIL-Plant Inspection Management System following eight (08) modules:
 - Asset Performance Management System (APMS)
 - Pressurized Equipment Management System (PEMS)
 - Pressure Safety Valves Management System (PSVMS)
 - Structure Inspection Management System (SIMS)
 - Lifting Equipment Management System (LEMS)
 - Miscellaneous Equipment Management System (MEMS)
 - Cathodic Protection Management System (CPMS)
 - Inspection Scheduling Management System (ISMS)
- Hands on Training of VAIL-Plant Software.
- Annual Maintenance and Support.
- Submission of User and Admin Manuals.



CASE STUDY INTEGRITY MANAGEMENT SOFTWARE DEVELOPMENT



Client:
Dragon Oil



Location:
Turkmenistan



Region:
Central Asia

SERVICE(S):

Software Supply & System Implementation Documentation, training & support

OBJECTIVE:

Dragon Oil required a robust Asset Integrity Management Software tool to manage the integrity of assets support all of its assets Onshore & Offshore Pipeline, Pressurized Equipment, Structures, PSVs, Electrical & Rotatory equipment.

SCOPE OF WORK:

- Software System Supply
- Documentation
- Maintenance and Support
- System Implementation
- Training
- Pilot study for Topsides Equipment (94), Process Piping (160), Structures Platforms (3) & Pipeline (5)

The software should be able to integrate into the Oracle E-business Suite applications database and handle inspection records for the following asset types:

- Pressurized Equipment & Piping
- Pressure Safety Valves (future)
- Onshore Pipelines
- Jacket Structures
- Offshore Pipelines

DELIVERABLES

VAIL-Plant Software, which is an Asset Integrity & Inspection Management Application developed on modular approach to meet all the objectives of Dragon Oil Turkmenistan Limited. The following modules of VAIL-Plant were successfully implemented for Dragon Oil Turkmenistan Limited along with training, User Acceptance Testing and pilot study:

- Asset Performance Management System (APMS)
- Pressurized Equipment Management System (PEMS)
- Pipeline Integrity Management System Onshore (PIMSON)
- Pipeline Integrity Management System Offshore (PIMSOFF)
- Structure Integrity Management System (SIMS)
- Pressure Safety Valves Integrity Management System (PSVIMS)
- Electrical Instrumentation Rotary Management System (EIRMS)
- CMMS Interface (ORACLE interface module)
- Inspection Scheduling Management System (ISMS)





CASE STUDY RBI IMPLEMENTATION AND PROVISION OF SOFTWARE



Client:
Groupement Berkine



Location:
Algeria



Region:
Africa

SERVICE(S):

Risk Based Inspection (RBI) FMECA Study Analysis Software Provision, Implementation & Management

OBJECTIVE:

Customization of Asset Integrity Management System (AIMS) Software to enable GB to schedule, prioritize and execute the inspection plan along with database management and data collection for Risk Assessment.

Strategize a Risk Based Inspection (RBI) Program and FMECA Study Analysis for Groupement Berkine HBNS and EI-Merk field assets in order to equip GB with an efficient and cost effective working method to identify degradation mechanisms and respective failure modes while proposing a credible risk mitigation plan.

SCOPE OF WORK:

VAIL Plant Software: Provision, Implementation and Management of VAIL Plant Software to continually manage assets for GB HBNS and EI-Merk Facilities.

Training: Comprehensive Training and hands on familiarization of GB Engineers during implementation and development of designated software at GB Facilities.

RBI: Establish a comprehensive Risk Based Inspection (RBI) Program for Pipelines, Pressurized Equipment and Piping at HBNS and EI-Merk facilities based on best practices and industrial standards to effectively manage corporate assets in order to gain maximum value, profitability and returns while safeguarding personnel, the community, and the environment.

FMECA: Implementing an FMECA based Risk Assessment Methodology for Pressure Safety Valves and Wellheads at HBNS and EI-Merk facilities to optimize the preventive maintenance activities.



DELIVERABLES

Velosi submitted the following deliverables to Groupement Berkine:

Asset Integrity Management System:

VAIL Plant Software Modules:

- Asset Performance Management System (APMS)
- Pressurized Equipment Management System (PEMS)
- Pipeline Integrity Management System – Onshore (PIMSON)
- Pressure Safety Valve Management System (PSVMS)
- Wellhead Integrity Management System (WHIMS)
- Inspection Schedule Management System (ISMS)
- Hands on Training of VAIL-Plant Software.
- Risk Based Inspection (RBI) Study at GB HBNS and EI-Merk Facilities along with Results and Conclusions for the following assets: FMECA Study & Maintenance Plan for Wellheads and PSVs at HBNS and EI-Merk Facilities along with Results and Conclusions.
- Preparation of Standard Operating Procedures (SOPs).



CASE STUDY DEVELOPMENT, IMPLEMENT & SUPPORT OF RBI PROGRAM FOR FULL PRODUCTION FACILITIES OF WEST QURNA-2 FIELD



Client:
LUKOIL



Location:
Iraq



Region:
Middle-East

SERVICE(S):

Asset Integrity Management System (AIMS)
Risk Based Inspection (RBI)
Software Implementation & Training

OBJECTIVE:

The development, implementation and support of RBI programs for field production facilities and pipelines during phase 1 and phase 2 development of the West Qurna-2 Field.

Implementation and maintaining RBI system properly, improves plant reliability and safety while reducing unplanned outages and repair costs.

Implementation of RBI helps to:

- Select cost effective and appropriate maintenance and inspection tasks.
- Shift from a reactive to proactive maintenance regime.
- Produce an auditable system.
- Implement a risk management tool (VAIL-Plant)

SCOPE OF WORK:

- Development of Asset Integrity Management Systems.
- Perform specific corrosion study for each equipment, piping & pipelines. Implement the RBI program for inspection data management and RBI analysis.
- Development of Written Scheme of Examination.
- Development of RBI software with inspection data management capabilities.
- Integration of RBI Software with ERP system (SAP).

DELIVERABLES

Asset Integrity Management System:

- Comprehensive RBI Program for Equipment, Piping & Pipelines, along with Results and Conclusions.
 - Remnant Life Assessment.
 - Inspection Plan.
 - Failure Rate and Risk Allocation.
- Written Scheme of Examination.

VAIL Plant Software Modules:

- Asset Performance Management System (APMS)
- Pressurized Equipment Management System (PEMS)
- Pressure Safety Valve & Relief Valve Management System (PSVMS)
- Pipeline Integrity Management System – Onshore (PIMSON)
- Integration of VAIL Plant Software with SAP (ISMS)

Asset Count

Asset Type	Length (km.)
Pipeline 1	3.8
Pipeline 2	6.7
Pipeline 3	4.4
Pipeline 4	4.4
Pipeline 5	6.3
Total	25.6

Asset Type	Qty.
Equipment	263
Piping System	4096
Total	4359





CASE STUDY PIPELINE INTEGRITY MANAGEMENT PROGRAM FOR SNGPL



Client:
SNGPL



Location:
Pakistan



Region:
Asia

SERVICE(S):

Pipeline Integrity Management (PIMS).
Risk Based Inspection (RBI).
Software Implementation & Management.
Quality Control Program.

OBJECTIVE:

Development of Pipeline Integrity Management (PIM) Software in accordance with ASME B31.8S.

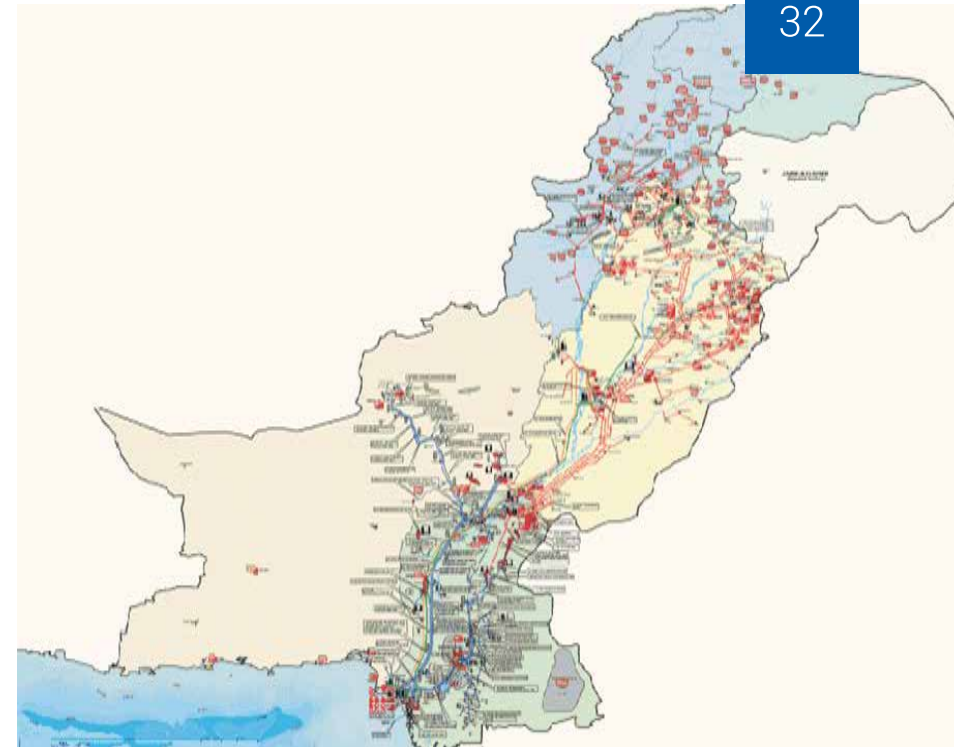
Strategize a Pipeline Integrity Management Program (PIMP) for SNGPL's pipelines and stations in order to equip SNGPL with a transparent and auditable working method to identify degradation mechanisms while proposing effective risk mitigation of earmarked assets.

SCOPE OF WORK:

VAIL Plant Software: Development of customized software in accordance with ASME B31.8S for various modules.

Training: Comprehensive Training and hands on familiarization of SNGPL Engineers and IT Officer during development, implementation of PIM Manual and designated software.

PIMP: Development of Pipeline Integrity Management Manual in line with ASME B31.8S. Implementation of PIM Program (PIMP) includes all the required field surveys & activities for 2 Buried Pipelines, Sales Metering Station & 1 Over Head Rover Crossing Line.



DELIVERABLES

Velosi successfully submitted the following deliverables to SNGPL:

VAIL-Plant Software Modules:

- Asset Performance Management System (APMS)
- Pressurized Equipment Management System (PEMS)
- Pipeline Integrity Management System - Onshore (PIMSON)
- Electrical Instrumentation Rotary Management System (EIRMS)
- Cathodic Protection Management System (CPMS)
- Inspection Schedule Management System (ISMS)

Asset Integrity Management System:

- Implementation of PIM Program (PIMP).
- PIM Manual (ASME B31.8S).
- Comprehensive Training and hands on familiarization of VAIL-Plant.
- Preparation of Standard Operating Procedures (SOPs).



CASE STUDY ASSET INTEGRITY MANAGEMENT SYSTEM FOR ONSHORE AND OFFSHORE TANAP ASSETS



Client:
TANAP



Location:
Turkey



Region:
Europe

SERVICE(S):

VAIL-Plant Asset Integrity Management System (AIMS) Software Implementation & Management.

OBJECTIVE:

Development of an Asset Integrity Management Software to enable TANAP to schedule, prioritize and execute the inspection plan along with database management and data collection for Risk Assessment. Integration of AIMS Software with TANAP's SAP, GIS & Envision.

SCOPE OF WORK:

- Provision and Implementation of VAIL-Plant Software modules to facilitate TANAP requirement for efficiently managing the corrosion and inspection data as part of the Asset Integrity Management System.
- Transfer of data to Computerized Maintenance Management System (CMMS) ensuring that inspection plans are fully implemented as planned during the Operations.
- Integrate with Geographic Information system to view the Pipeline Locations in GIS map.
- Interface with TANAP Document Management System to establish the related links between Client's DCC, AIMS and CMMS.
- Detailed training courses to Client staff to ensure the program adoption and software usage are well understood by Client personnel and hands-on experience of AIMS software is transferred to TANAP staff.

DELIVERABLES

Velosi successfully submitted the following deliverables:

- VAIL-Plant Asset Integrity Management System Software Modules:
 - Asset Performance Management System (APMS)
 - Pressurized Equipment Management System (PEMS)
 - Pipeline Integrity Management System - Offshore (PIMSOFF)
 - Pipeline Integrity Management System - Onshore (PIMSON)
 - Pressure Safety Valves Integrity Management System (PSVMS)
 - Inspection Schedule Management System (ISMS)
 - Control Panel
- Integration of VAIL-Plant system with SAP Plant Maintenance Module
- Integration of VAIL-Plant with ArcGis for Geographical Interface
- Integration of VAIL-Plant with enVision Document Management System (EDMS)
- GO LIVE of VAIL Plant Software
- Training of VAIL-Plant Software at the client site





CASE STUDY ONE ERP EAM INTERFACE DEVELOPMENT

Client:
ADNOC LNG

Location:
Abu Dhabi, UAE

Region:
Middle East

SERVICE(S):

One ERP EAM Interface Development

OBJECTIVE:

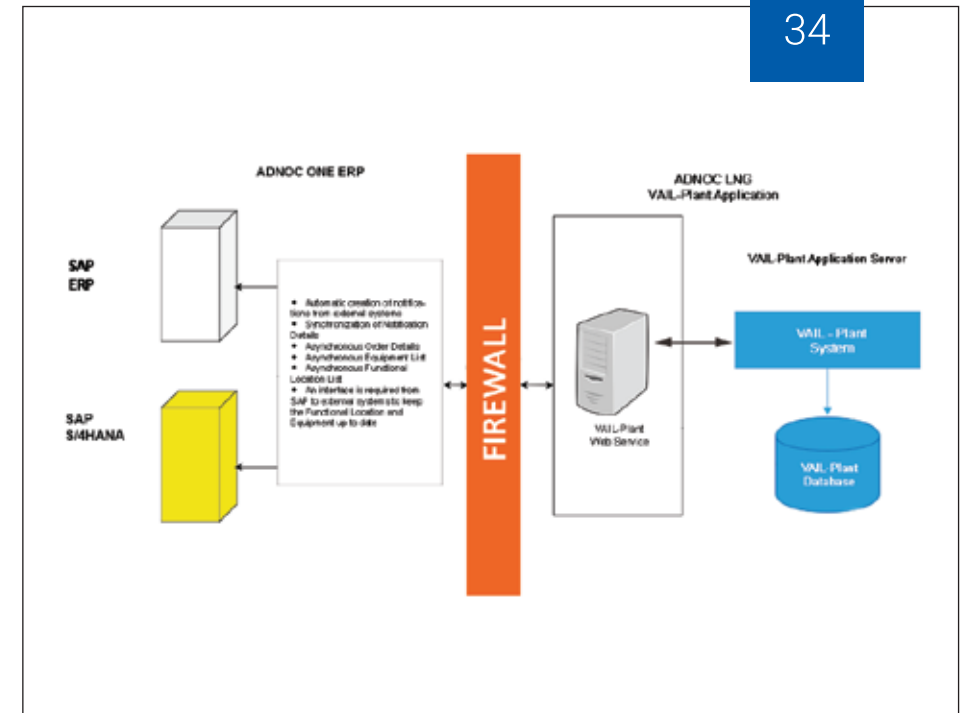
ADNOC's SAP S4 HANA Interface development to integrate with Velosi's application VAIL-Plant application to ensure the synchronization between the two applications.

SCOPE OF WORK:

The services included, but not limited to the followings;

- Development of interfaces required for ADNOC ONE ERP EAM (SAP S4/HANA) to integrate with Velosi's VAIL-Plant application.
- Modification in Velosi VAIL-Plant system to accommodate ADNOC required changes.
- Test completion
- User Acceptance Testing
- Production System Deployment

34



DELIVERABLES

Velosi developed following Interface for the integration of Velosi's VAIL-Plant system with ADNOC SAP S4 HANA:

- Asynchronous Equipment from SAP S4/HANA to VAIL-Plant System. (Outbound)
- Asynchronous Functional Location from SAP S4/HANA to VAIL-Plant System. (Outbound)
- Automatic creation of notifications from VAIL-Plant System to SAP S4/HANA.
- Retrieving Notification details from SAP S4/HANA to VAIL-Plant.
- Retrieving Work Order details from SAP S4/HANA to VAIL-Plant.
- Retrieving Equipment List from SAP S4/HANA to VAIL-Plant.
- Retrieving Functional Location List from SAP S4/HANA to VAIL-Plant.



CASE STUDY PROVISION OF RISK BASED INSPECTION



Client:
Binh Son Refinery



Location:
Vietnam



Region:
Southeast Asia

SERVICE(S):

- Provision of Risk Based Inspection (RBI) for Dung Quat Refinery
- Supply of Computerized Inspection Management System (CIMS)

OBJECTIVE:

Development of RBI Methodology and Establish Computerized Inspection Management System (CIMS) applied for all equipment and piping system in BSR Refinery with reasonable combination of qualitative, semi-quantitative and quantitative assessment. CIMS software must be full integration with BSR exist CMMS Maximo.

SCOPE OF WORK:

Supply Computerized Inspection Management System (CIMS) for execution RBI analysis / Inspection Management of all Static & Pressurized Equipment and Piping System in BSR Refinery (such as Pressure Vessels, Tankages, Piping).

Required interface software module (interface with CMMS) which used to exchange data between CIMS and CMMS (transfer Inspection Request/ Inspection Work Order / Inspection Report);

Supply training documents and train BSR for administration and operation of CIMS.

DELIVERABLES

Velosi successfully submitted following deliverables to BSR:

- VAIL-Plant Software Modules:
 - Asset Performance Management System (APMS)
 - Pressurized Equipment Management System (PEMS)
 - Inspection Scheduling Management System (ISMS)
- End User Training
- Training manuals/documents
- VAIL-Plant Integration with Maximo





CASE STUDY PROVISION OF ASSET INTEGRITY MANAGEMENT SYSTEM



Client:
BAPCO



Location:
Sudan



Region:
North-East Africa

SERVICE(S):

VAIL-Plant Asset Integrity Management System implementation. VAIL-Plant Integration with EPICOR ERP and Omni Docs.

OBJECTIVE:

Development of Asset Integrity Management System (AIMS) in order to enhance the plant safety, integrity and availability to meet operational and long term production requirements. The pipeline facilities consists of central processing facility, five pump stations distributed along 1128 km, 32 inch pipeline and a marine terminal located in Bashayer II, Port Sudan, Sudan.

SCOPE OF WORK:

- Preparation of Asset Integrity Management System
- Preparation of Operating Manuals
- Preparation of Inspection Procedures
- RBI of Static Equipment, Piping, Onshore & Offshore Pipelines and Pressure Relieving Devices
- RCM Analysis for Rotary, Electrical Equipment, and Instrumentation
- SIL Classification and Verification Study
- Supply of Asset Integrity Management Software
- Supply of SIL software
- Supply of Hardware for Asset Integrity Management Software and SIL
- Integration of AIMS Software with ERP system and Document Management System
- Facilitate Training program for End-users



DELIVERABLES

Velosi successfully submitted following deliverables to BAPCO:

- VAIL-Plant Software Modules:
 - Asset Performance Management System (APMS)
 - Pressurized Equipment Management System (PEMS)
 - Pipeline Integrity Management System Onshore (PIMSON)
 - Pipeline Integrity Management System Onshore (PIMSOFF)
 - Pressure Safety Valve Management System (PSVMS)
 - Electrical Instrumentation and Rotary Management System (EIRMS)
 - Inspection Scheduling Management System (ISMS)
- VAIL-SIL software
- End User Training
- Training manuals/documents
- VAIL-Plant Integration with EPICOR ERP System.
- VAIL-Plant Integration with OmniDocs Document Management System



CASE STUDY RISK BASED INSPECTION PROGRAM DEVELOPMENT FOR PETRONAS FLNG 1 (L) LTD. TOPSIDE STRUCTURE AND HULL



Client:
PETRONAS



Location:
Malaysia



Region:
Southeast Asia

SERVICE(S):

Implementation of FIMS (Facilities Integrity Management System)

OBJECTIVE:

Establish Risk Based Inspection (RBI) Program for Topside Structure Including Turret, Hull Structure Including Cargo Tanks, Mooring System and Flexible Riser by carrying out comprehensive risk analysis.

Integration of recommended RBI IRP with class survey requirement including endorsement/approval from the current Class Society.

SCOPE OF WORK:

The scope of work for the Risk Based Inspection Program Development for Petronas FLNG 1 (L) LTD Topside structure and Hull Structure:

- Topside Structure Including Turret
- Hull Structure Including Cargo Tanks
- Mooring System
- Flexible Riser
- RBI Software

VAIL Plant Software: RBI Software Package for risk assessment and recording of RBI data including inspection plan with database which shall be valid throughout the FLNG1 design life.

DELIVERABLES

Risk Based Inspection Program:

- Comprehensive RBI Study for Topside Structure.
- Tag Marked Drawings for SIMS and HIMS.
- Failure Rate and Risk Allocation
- RBI Report with results and conclusions.
- Recommendation on additional safeguards and action(s) where required.
- Inspection plan comprising of inspection method, coverage and frequency.

VAIL Plant Software Modules:

- Asset Performance Management System (APMS)
- Structure Integrity Management System (SIMS)
- Hull Integrity Management System (HIMS)
- Inspection Scheduling Management System (ISMS)
- Integration of VAIL-Plant Software with SAP

Asset Count

Asset Description	Asset Count
Topside Structure	34 Modules
Hull	18 Tanks, foundations & platforms
Flexible Riser	1 Flexible Riser
Mooring Chain	12 Mooring Chains





CASE STUDY IMPROVISATION OF NEW DEVELOPMENTS AT OGDCL THROUGH THE INTEGRATION OF VELOS'S VAIL-PLANT SOFTWARE



Client:
OGDCL



Location:
Pakistan



Region:
Asia

SERVICE(S):

Integration of VAIL-Plant (Asset Integrity Management System) Software.

OBJECTIVE:

To successfully deploy the Asset Integrity Management System as per OGDCL's philosophy and strategy while fulfilling OGDCL's specific requirements through Customization and Configuration of The VAIL-PLANT software. Incorporating client data in the set software and deployment of a solution in the Client test environment and User Acceptance Testing. This project aimed to provide System Training Provision Software documentation and monitor the integration, data conversion, and migration so that all relevant information is accurately transferred to the new system.

SCOPE OF WORK:

- Risk Based Inspection (RBI) Assessments as per API 580 & 581
- Fitness for Service (FFS) Assessments as per API 579 and/or BSI 7910
- Field / Plant Remaining Life Assessments
- Asset Life Extension
- Internal Corrosion Direct Assessment (ICDA)
- Material failure investigations / Root-Cause Failure Analysis – RCFA (aided by SEM, TEM, XRF, XRD etc.)
- Materials and Corrosion Engineering Services
- General Inspection Engineering Services



- Welding Inspection Services including welder's Qualification / Welding procedure
- Specification (WPS), Procedure Qualification Record (PQR)
- Quality Control / Quality Assurance Services During Fabrication Works / Projects.
- Asset Integrity Management System (AIMS)

DELIVERABLES

VAIL Plant Software Modules:

- Asset Performance Management System (APMS)
- Pressurized Equipment Management System (PEMS)
- Pressure Safety Valves Management System (PSVMS)
- Electrical, Instrumental and Rotary Management System (EIRMS)
- Inspection Scheduling Management System (ISMS)
- System Configuration and Setting Module



CASE STUDY IMPLEMENTATION OF ASSET INTEGRITY MANAGEMENT SYSTEM FOR PLUSPETROL



Client:
Pluspetrol



Location:
Argentina, Peru and Ecuador



Region:
South America

SERVICE(S):

Implementation of an Asset Integrity Management System (AIMS) to meet the functional and organizational needs of PlusPetrol.

OBJECTIVE:

Strategizing the Asset Integrity Management System (AIMS) for PlusPetrol to oversee the pressure control equipment and pipeline integrity management according to the functional and organizational needs of PlusPetrol. System integration with a number of third-party enterprise systems and related applications, such as SAP Plant Maintenance, ESRI Geographical Information System, Enterprise Time Series Data Historian, Azure Active Directory for single sign-on, and Cloud Access Security Broker. Ensure all necessary information is transferred accurately into the new system through the integration, data conversion, and migration process, and ensure that the system is implemented and deployed consistently across multiple locations in PlusPetrol's operations, such as Argentina (La Calera and Rio Colorado), Peru (Malvinas and Pisco), and Ecuador, thus allowing for greater asset management and monitoring.

Ultimately, the project aimed to improve the integrity, reliability, and safety of PlusPetrol's pressure control equipment and pipeline assets by implementing Velosi's Asset Integrity Management System.

SCOPE OF WORK:

- Asset Integrity Management System (AIMS)
- Implementation of AIMS across multiple geographical locations where PlusPetrol carries its operations including Argentina (La Calera and Río Colorado), Peru (Malvinas and Pisco) and Ecuador.

DELIVERABLES

Asset Integrity Management System (AIMS) with below modules and functions

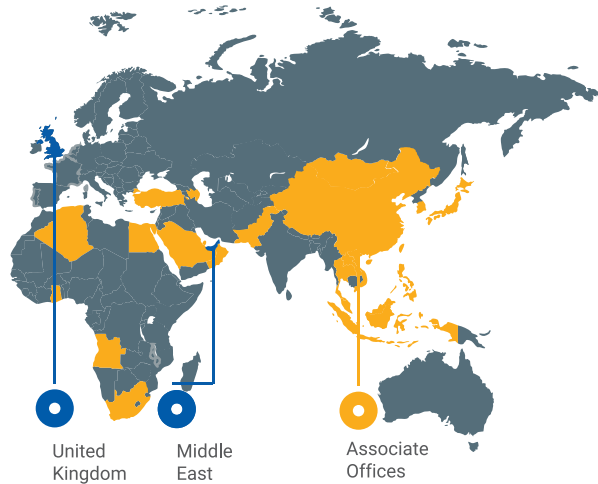
- Asset Performance Management System (APMS)
- Implementation of Pipeline Integrity Management System (PIMS Onshore & Offshore)
- Pressurized Equipment Management System (PEMS)
- Implementation of Pressure, Safety Valves Management System (PSVMS)
- Inspection Scheduling Management System (ISMS)
- Comprehensive Training and hands-on familiarization of VAIL Plant
- Preparation of Standard Operating Procedures (SOPs)



OUR CLIENTS

OFFICES WORLDWIDE



UK Office (Corporate Office)

Jersey, United Kingdom

Middle East Office (Headquarters)

United Arab Emirates

Associate Offices Worldwide

Algeria, Angola, Bahrain, Brunei, Cambodia, China, East Timor, Egypt, Ghana, Indonesia, Japan, Kuwait, Laos, Malaysia, Mongolia, Myanmar, Oman, Philippines, Qatar, Saudi Arabia, Pakistan, Singapore, South Africa, South Korea, Taiwan, Thailand, Turkey, Vietnam

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