VISION
To be recognized as World’s Leading Engineering Service Provider Company delivering total system solutions to Owner Operator, EPC Contractor, Fabricator, Package Vendors and Construction Contractor

MISSION
• Driven to deliver Projects to Client to their full satisfaction through a team of professional and specialized engineers, complying with the World Class Standards of Safety, Quality and Environment Protection
• Ensure a clear understanding of project complexity, identify risk and maintain risk management rigor each step of the way
• Adhering to the principles of Code of Ethics and Business Conduct
• Highly Innovative, Responsive and Cost Conscious in providing solutions to client
• Implementation of state of the art Engineering and Design applications to assure high efficiency and accuracy in delivering projects
• Growth and Expansion through successful completion of Projects and develop diverse client portfolio

QUALITY POLICY
Committed to maintain high quality while executing and delivering Projects through continuous and sustained efforts by all team members

INDUSTRIES
- OIL AND GAS
- PETROCHEMICAL
- FERTILIZER
- CEMENT
- POWER

CLIENTELE
- OWNER OPERATOR
- EPC CONTRACTOR
- FABRICATORS
- PACKAGE VENDORS
- CONSTRUCTION CONTRACTOR

SERVICES
- ENGINEERING SERVICES SUPPORT
- PROJECT AUTOMATION
- CONSTRUCTION WORKFACE PLANNING & 4D VIRTUAL CONSTRUCTION MODEL
- PIPING / STEEL FABRICATION MANAGEMENT
- DIGITAL ASSET MANAGEMENT
- OWNER OPERATOR DATA CONVERSION & DATA MANAGEMENT
VR Engineering has highly skilled and experienced staff to provide Engineering Support for Proposal Engineering, Front End and Detailed Engineering.

**PIPING**
- Design Basis
- Development of Unit and Overall Plot Plan
- 3D Modelling using PDMS, PDS, SP3D, CADWORKS and AUTO PLANT
- Nozzle Orientation Drawings
- Piping Material Specification
- Development of Line Shoot Diagrams for Material Take Off for Proposal
- Material Take Off
- Material Procurement Support, Inquiry and Purchase requisition including Technical Bid Evaluation
- Piping Stress Analysis
- Pipe Support Standard Development with Material Take Off
- Cost Estimate development of Piping Materials for Proposals
- Bill of Quantity for Construction
- Isometric Drawing
- Development of Material Codification and Material Management System with Cost for Ready Proposal Cost Estimate

**CIVIL AND STRUCTURAL**
- Design Basis
- Technical Specification
- Analysis and Design of Structures
- 3D Modelling using PDMS, PDS, SP3D, CADWORKS and AUTO PLANT
- Detailed Drawings
- Material Take off for Steel and Concrete Works
- Cost Estimate Development of Materials for Proposal
- Bill of Quantity for Construction
- Material Procurement Support including Technical Bid Evaluation
- Structural Fabrication Drawings
- Steel Fabrication MTO
- Reconciliation of Material
- Material Management System for Steel and Concrete Works

**ELECTRICAL**
- Electrical System Studies
- Electrical Load List and Analysis
- Single Line Diagram
- Electrical Equipment Layout
- Electrical Equipment Sizing Calculations
- Substation Engineering
- Cable Tray Sizing and Layout
- Cable Schedule and Drum Schedule
- DB and JB Schedule
- 3D Modelling using PDMS, PDS, SP3D, CADWORKS and AUTO PLANT
- Smart Plant Electrical Or Aveva Electrical Support
- Cost Estimate Development of Materials for Proposal
- Bill of Quantity for Construction
- Material Procurement Support with Inquiry and Purchase requisition including Technical Bid Evaluation
INSTRUMENTATION

- Instrument Index
- Specification and Data Sheets
- Control Valve Sizing
- Logic Diagrams
- F&G Layout
- 3D Modelling using PDMS, PDS, SP3D, CADWORKS and AUTO PLANT
- Loop and Instrument Hook-up Drawings
- Control Philosophy
- Instrumentation Engineering using Smart Plant Instrumentation
- Smart Plant Instrumentation Administration Support
- Cost Estimate Development of Materials for Proposal
- Bill of Quantity for Construction
- Material Procurement Support including Technical Bid Evaluation

HSE

- Active Fire Protection System Engineering
- Passive Fire Protection System Engineering
- Process Safety Engineering
- Fire & Gas Detection System Engineering
- Hazardous area Classification Engineering
- Emergency Response Management System Engineering
- Construction Safety Management Supports
- Audit & Risk Assessment

PROJECT AUTOMATION

VR Engineering Solutions has people with more than 23 years of experience with very high International Repute in the field of Project Automation.

INTELLIGENT P&ID MODELLING THROUGH SMART PLANT P&ID/AVEVA DIAGRAM

- Intelligent P&ID Drawing
- Line List with all Process and Piping Parameters
- Equipment List with all Parameters
- Instrument List with Soft Tags and Loop Numbers
- Instrument List output with Loops no’s in a format loadable to SPI
- Process Data Sheets Template
- Material Take Off for all items except Pipes and Elbows for Piping as MTO till the model is fully developed, eliminating all the manual efforts of taking MTO from the P&ID for the P&ID items
- Valve List
- Report for Electrical Tracing Studies
- Intelligent System and Sub-System Mark-up
- System and Sub-System wise details and Data for CCMS
- RBI Mark-ups and report for populating CISM

3D MODELLING

- Development of Work Breakdown Structure
- Equipment Modelling
- Piping Modelling
- Concrete Modelling
- Structural Modelling
- Output to Tekla for Fabrication Model
- Electrical/ Instrumentation/ Telecom Equipment Modelling
- Electrical/ Instrumentation/ Telecom Raceway Modelling
- Extraction of General Arrangement Drawings
- Extraction of Piping Isometrics for Construction and as well as for Inspection
- Clash Checking
- Accurate Material Take Off from the Model for Piping, Standard Installations of Electrical/ Instrumentation/ Telecom, Civil Foundations and Structural
SOFTWARE EXPERTISE

Smartplant P&ID/ Aveva Diagram

- Project Setup
- Database Customization
- Intelligent P&ID Output
- Report Customization
- Report Extractions
- Integration with 3D Model - PDMS, SP3D or PDS to eliminate any mismatch between 3D Model and P&ID - Eliminates manual yellow line checking
- Publishing of P&ID to Smart Plant Foundation
- Sections writing in Contract for Owner Operator

PDS/ PDMS/ SP3D/ CadWorx & Autoplant

- Project Setup
- Database Customization
- Component Library creation including Symbol Customization
- Creation of Piping Specification in Loadable Format
- Electrical/ Instrumentation/ Telecom Raceway Specification Customization
- Report Customization
- Report Extractions
- Integration with 3D Model - PDMS, SP3D or PDS to eliminate any mismatch between 3D Model and P&ID - Eliminates manual yellow line checking
- Publishing of P&ID to Smart Plant Foundation
- Sections writing in Contract for Owner Operator

Smartplant Instrumentation

- Project Setup
- Database Customization
- Creation of Specification
- Customization of Instrument Index
- Wiring and Termination Diagrams
- Instrument Data Sheets

Integration of Design Systems

Integration of different systems eliminates rework. VR Engineering Solution's strength lies in Integrating different Design/ Information Management systems. We have expertise in

- Customized Integration Module development with minimum or without any change in the Work Process of organization
- Development of Process Map to Inter Department Information Exchange
- Customization of different Design Systems as per the Process Map
- Development of Work Flow Chart
- Development of Functional Design Specification of Integration of Systems
- Development of Integrated Systems
CONSTRUCTION WORKFACE PLANNING & 4D VIRTUAL CONSTRUCTION MODEL

Workface Planning

- Workface Planning is an organized, structured system for Planning Constraint free execution strategy from Engineering to Procurement to Construction to Commissioning, which helps in identifying and eliminating any constraint in Engineering or Procurement which can cause possible delay to Construction.

Components of Workface Planning

- Work breakdown Structure
- Construction Work Area
- Construction Work Pack
- Engineering Work Pack
- Field Installation Work Pack
- Integrated Design and other Management Systems
- 4D Virtual Construction Management System

4D Virtual Construction Model

- VR Engineering Solutions has expertise in the development of 4D Virtual Construction Model using Construct Sim.
- This brings visual control on the Progress of Construction, Work front analysis, Constraint review. This works in an integrated environment, where Engineering Design Systems, Intelligent P&ID System, Fabrication Management System and Procurement Systems are linked together to provide all upfront information for Constraint Analysis and better work control.

Role of VR Engineering Solutions in Workface Planning

VR Engineering Solutions has well experienced staff who have executed projects on this concept. VR Engineering Solutions will be happy to develop the

- Work Breakdown Structure
- Detailed Tagging Procedure
- Customization of all Design Systems to meet the requirements of WFP
- Customization and Management of 4D Virtual Construction Management System
- Technical/ Master Document Register in such a way that it works as Level-4 Schedule for Engineering
- Support in developing the Level-5 Schedule for Construction Planning.
- integrated Engineering and Construction Schedule
- Look ahead Commodity and Construction projections
- Level-5 Construction Schedule
- Alignment of deliverables from Engineering and Procurement to meet the Construction requirement
- Engineering Work Pack
- Construction Work Pack
- Field Installation Work Pack
- Progress Measurement Basis

What We Achieve?

- Better Planning
- Reduction in Construction Cost both in terms of Man-hours and qty
- Definite ROI at least 4% savings Construction Man hours/ Cost
Digital Asset Management is the requirement of today's world to keep all the information of the Asset on a single core database integrated with different Design and Maintenance systems for the effective management of Asset.

VR Engineering Helps Provide Services for:

- Conversion of AutoCAD P&ID to Intelligent P&ID
- Laser Scanning Specification Development
- Laser Scanning of old Plants and Development of Intelligent 3D Model
- Integration of Intelligent P&ID to 3D Model
- Input of System and Sub-System information into P&ID
- Input of Corrosion Loop Information into P&ID
- Implementation of Smart Plant Instrumentation
- Update of Smart Plant Instrumentation Database
- Extraction of Tag Register from above mentioned tools
- Integration of P&ID & 3D Model to CCMS, CISM, CMMS and SAP for direct exchange of data according to item hierarchy
- Tag Register input for SAP
- Detailed Tagging Procedure development of Maintainable/ Non-Maintainable Tags
- Setup of Corrosion Inspection Isometric
- Customization of Reports
- Development of relevant sections in Contract for the Project Award
- Loading of Data in SAP
- Management of CCMS, CISM, CMMS Systems

What We Achieve?

- **Accurate As-Built Information**
- **Better Maintenance Schedule**
- **Visibility to Operations Team**
- **No need to give separate contract for SAP Data Input**
- **Definite ROI for future projects**

**COMMISSIONING SUPPORT**

- System and Sub-System Mark-up of the P&ID
- Intelligent P&ID output showing System and Sub-System boundaries in Smart Plant P&ID, Aveva Diagram etc.
- Data segregation/ preparation for loading in CCMS for all Engineering Disciplines by System and Sub-System
- Pre-Commissioning BOQ
- Test Pack definition and preparation
- Support for preparing the Commissioning Schedule
- Pre-Commissioning and Commissioning qty segregation and progress measurement
- Visualization of System and Sub-System information in a 3D Model

**PIPING/ STEEL FABRICATION MANAGEMENT**

- Alignment of Material Delivery
- Spool Drawing Creation through Spoolgen
- Job Card Issuance for Fabrication with Material Management of Delivery and Inventory
- Daily Shop Fabrication Progress
- Look ahead Quantity projection for effective Shop Loading and Welder Management
- Feasibility Curves
- Control of joints for NDE especially for RT, to reduce the cost of NDE with definite ROI
- Implementation of Bar-Coding Systems for the effective progress tracking (Passive/ Active)
- Packing list preparation through Bar-Code reading to eliminate any gap in delivery, Cost reduction by eliminating schedule impact with accurate material delivery
- Implementation of our Fabrication Management System at Fabrication Shop and at Site