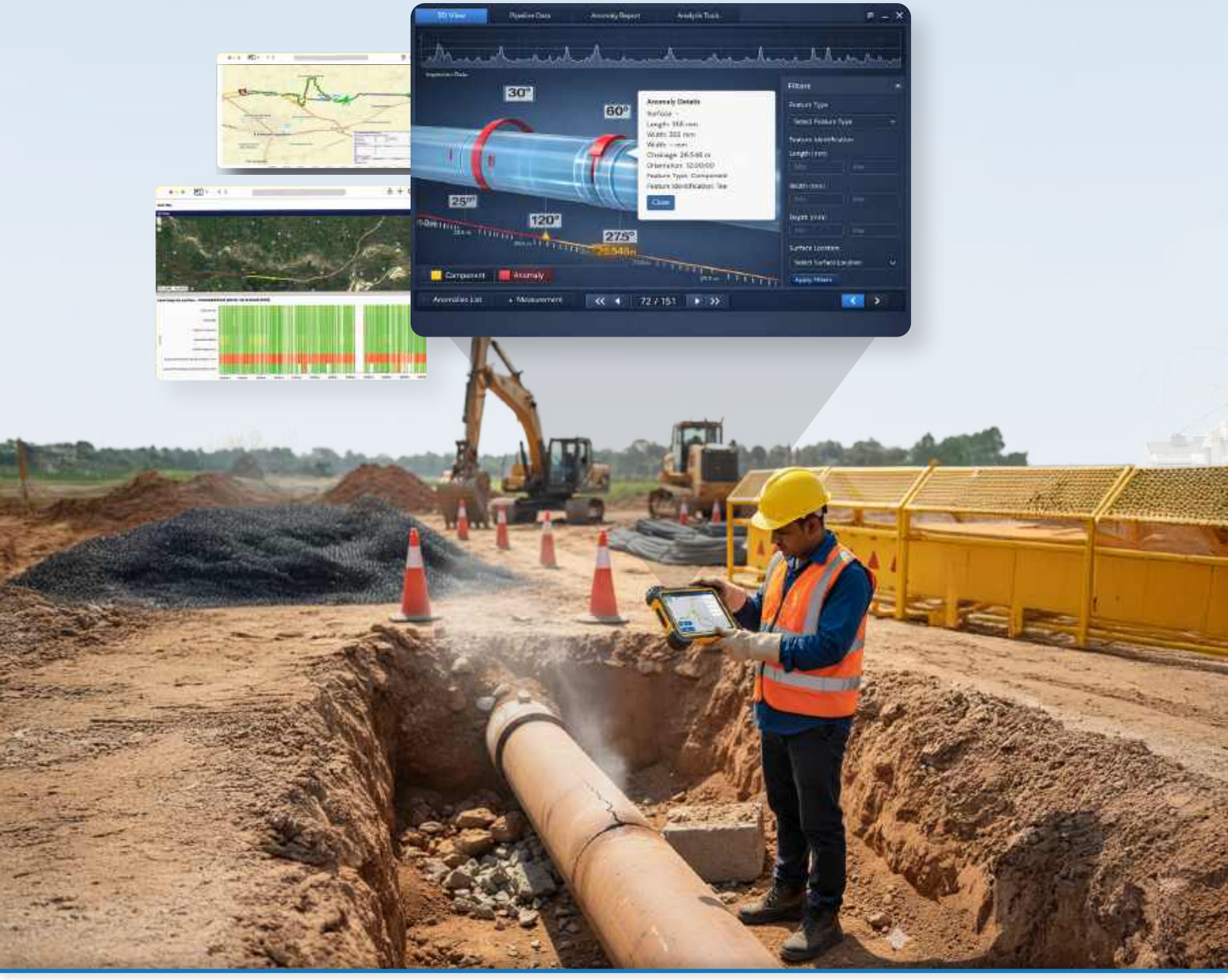
Unistal USE GROUP Since1994

SmartSafeNet™

Pipeline Integrity Management Solution



Solutions for Pipeline Utilities

SmartGasNet™
Web, GIS & Mobility based Project Management Solution for City Gas Distribution

PCMS™
Pipeline Construction Management Solution

PAMS
Pipeline Asset Management Solution

SmartUtilitiesNet™
Solution for Urban, Rural & Irrigation Water Distribution

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ISO 9001 ISO 27001 CMMI

Unistal Systems Pvt. Ltd., with 32+ years of expertise, is a trusted leader in Web, GIS, and Mobility based Project Management Solutions for the Oil & Gas and utility sectors. Our flagship PCMS™ and SmartSafeNet™ empower pipeline operators with Traceability Verifiability, Completeness from Planning, Execution, Operations, Integrity and Risk Assessment. For City Gas Distribution, SmartGasNet™ delivers an end-to-end solution for execution, maintenance, incident reporting and CRM — driving efficiency, reliability. Solutions offered are AI enabled with Live GIS Digital Twin.

SmartSafeNet™ : (Pipeline Integrity Management Solution): Solution for Risk Assessment using ASME B31.8S- regulation for Piggable and Non-Piggable pipelines. Solution covers Pipeline Asset master, CP Monitoring, Corrosion Coupon and ER Probe, Anomaly register (ILI), Scrapper Pigging with residue analysis. Facilitates aggregation of Historical and Direct assessment from field and SME inputs for every threat & consequence to generate historical & reliability based results. Reports are generated on tables, PDF and visualized on GIS. Generates risk mitigation measures, corrective action report, threat history, financial loss report etc.

PCMS™ (Pipeline Construction Management System): Solution for Mid-Stream Oil & Gas Pipeline Projects covering Pipe Tracking, Construction Monitoring, QC, GIS Visualization, Material Management, Abstract of measurement, Documentation and Land Records Management.

SmartGasNet™ (Web, GIS & Mobility Based Project Management Solution for City Gas Distribution) : Solution for City Gas distribution projects covering Design, Construction (Steel/MDPE/ Riser), Materials Management, Progress Monitoring, AOM, GIS Visualization, Network Outage Management, CRM covering Consumer acquisition to registration, Last Mile Connectivity, Consumer Billing and Complaints. CNG Station asset installation module, CNG station Equipment Complaints, Civil Complaints, Calibrations, Gas Loss/Gain, Engine Fuel Flow/Rate. CNG LCV Tracking with live GIS tracking, Gas reconciliation, generation of vendor AOM and Penalties.

SmartUtilitiesNet™ (Solution for Urban, Rural & Irrigation Watter Distribution) : Solution for water transmission and distribution covering Materials, Construction (PE/ DI/ Steel), Monitoring, GIS Visualization, House Service Connections, Consumer Management and Billing, Operation and Maintenance.

PAMS (Pipeline Asset Management Solution): Solution for managing pipeline asset installations (Electrical/Instrumentation/Mechanical) with alerts for preventive maintenance and condition monitoring.

Our Esteemed Customers

GAIL, IOCL, BPCL, HPCL, NRL, IGGL, GSPL, GITL

GIGL, H ENERGY, HOWE-ADANI, ONGC, ADANI, IGL, Purba Bharati Gas, JWIL

British Petroleum, ADNOC Onshore, OQ Oman, PDO Oman, Petronas Carigali, GASCO, PGN, EXXON

SWCC, TECNICAS REUNIDAS, TECNIMONT, NIPCO GAS LTD.

SmartSafeNet™

Pipeline Integrity Management Solution

Pipeline integrity demands more than periodic inspections—it requires continuous understanding of threats, condition, and risk. SmartSafeNet consolidates asset data, integrity surveys, analytical assessments, and field observations into a single system, supporting **proactive integrity management, quantitative risk assessment and timely mitigation.**

1. Asset Master

Centralized master data repository for pipeline assets, sections, stations, and integrity-related devices, forming the foundational digital model of the pipeline network.

Key Benefits

- Single source of truth for pipeline configuration and specifcations
- Eliminates data silos across integrity, GIS, and operations
- Enables consistent downstream analysis and reporting
- Reduces dependency on spreadsheets



2. Pipeline GIS

Geospatial visualization of pipeline alignment with stations, devices, surveys, and integrity data dynamically linked to chainage-based segmentation.



Key Benefits

- Spatial context for integrity and operational decision-making
- Faster identification of high-risk and sensitive locations
- Improved coordination between field and office teams
- Visual correlation of multiple survey datasets

3. Integrity Activity Scheduler

Planning and scheduling module for integrity activities, enabling task assignment, alerting, and tracking of surveys and maintenance actions.



Key Benefits

- Ensures timely execution of integrity activities
- Reduces missed or overdue inspections
- Improves accountability across maintenance bases
- Supports proactive integrity management

4. In-Line Inspection (ILI) Module

End-to-end management of ILI data including vendor data upload, anomaly assessment (ASME B31.8), repair tracking, analytics, and 3-D visualization.



Key Benefits

- Structured handling of large ILI datasets
- Improved traceability of anomalies and repairs
- Supports engineering assessments and what-if analysis
- Enhances confidence in integrity decision-making



5. Cathodic Protection Module

Comprehensive management of CP monitoring data including short-interval (CP Unit, TLP, AGB monitoring) and long-interval surveys (CIPS, CAT, DCVG, ACVG, Soil Resistivity Survey), with analytics for alignment and visualization.



Key Benefits

- Early identification of under-protected or over-protected zones
- Integrated view of CP performance across the pipeline
- Improves effectiveness of corrosion prevention programs
- Reduces risk of external corrosion failures

6. Internal Corrosion Monitoring

Monitoring and analysis of internal corrosion using pigging data, corrosion coupons, ER probes, gas quality, and operating parameters.

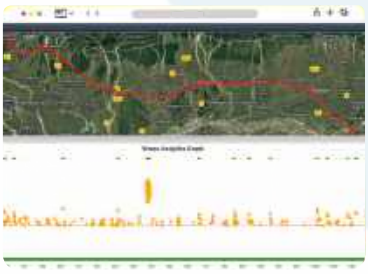
Key Benefits

- Visibility into corrosion trends and deterioration rates
- Better planning of pigging and chemical programs
- Reduced likelihood of internal corrosion leaks
- Data-driven understanding of operating impacts



7. Stress & Strain Analysis

Engineering analysis of pipeline stresses and strains including bending strain, external surface loads, and pressure-based cyclic (fatigue) loading.



Key Benefits

- Identification of mechanically vulnerable pipeline segments
- Improved assessment of fatigue and long-term integrity risks
- Supports integrity decisions in high-load and sensitive areas
- Complements ILI and geospatial integrity data

8. Line Patrolling

Digital management of pipeline patrolling activities including route creation, patroller assignment, mobile data capture, and supervisory monitoring.

Key Benefits

- Improved surveillance coverage and traceability
- Faster reporting of encroachments and anomalies
- Reduced manual reporting and paperwork
- Real-time visibility of field activities



9. Direct Assessment (ECDA / ICDA / SCCDA)

Structured workflows for direct assessment methodologies, integrating survey data, modeling inputs, dig selection, validation, and feedback.



Key Benefits

- Systematic and auditable DA execution
- Improved targeting of excavation and validation digs
- Better understanding of corrosion and SCC susceptibility
- Reduced uncertainty in integrity assessments

10. Quantitative Risk Assessment

Configuration and evaluation of risk models by integrating threats, integrity survey results, and pipeline attributes to derive actionable risk outputs.

Key Benefits

- Objective prioritization of mitigation and repair activities
- Transparent risk-based decision-making
- Supports long-term integrity planning and budgeting
- Enables comparison across assets and regions



11. Dashboards

Management and operational dashboards providing consolidated views of assets, integrity surveys, risks, and key performance indicators.



Key Benefits

- Executive-level visibility into pipeline health
- Faster, informed decision-making
- Cross-module insights without manual data collation
- Clear communication of integrity status to stakeholders



SmartSafeNet™ - Feature List

SmartSafeNet PIMS - Feature List						
Modules	Features	Description	Web	Mobility	GIS	Dashboard
Asset Master	Define Pipeline/Sections	Configure design specifications of sections	Yes		Yes	Yes
	Configure Stations	Associate Stations with Sections				
	Configure Devices	CPPSM/TRU, TLP, AGB				
	Reports	Reports wwith all assets and details				
Pipeline GIS	PGIS	all sections on GIS with Stations, Devices, etc	Yes	Yes	Yes	
Integrity Activity Scheduler	Activity Master	Master list of all integrity activities with	Yes		Yes	Yes
	Assign Tasks	Assign tasks to Maintenance Bases				
	Alert Configuration	Send alerts for Due/Overdue Integrity Activities				
Cathodic Protection	Short Interval Surveys	CP Unit, TLP, AGB Monitoring	Yes	Yes	Yes	Yes
	Long Interval Surveys (> 1 yr)	CIPS, CAT, DCVG, ACVG, DC/AC Interference				
	Analytics	Alignment Sheet and Heatmap generator				
In-Line-Inspection	Upload vendor ILI data	Maintain pipetally for historical ILI runs	Yes		Yes	Yes
	Assessments	FFS Assessment, Dent Assessment				
	Anomaly Register	Manage verification and repair data of anomalies. Automatic dig sheet generation				
	Analytics	What-If-Analysis, ILI anomaly alignment, 3-D view on anomalies				
Internal Corrosion	Cleaning Pigging	Manage cleaning pigging runs and perform debris analysis	Yes			Yes
	Corrosion Coupon Monitoring	Corrosion Rate Trend analysis				
	ER Probe Monitoring	Corrosion Rate Trend analysis				
	Gas Source Quality Monitoring	SCADA integration to monitor source gas parameters				
	Operating Parameters	Monitor Operating Pressure, Temperature and Flow Rate				
Strain & Stress Analysis	Bending Strain Analysis	Analysis of longitudinal strain using ILI xyz data	Yes		Yes	
	Highway load calculations	Structural analysis of pipeline stresses due to external surface loads				
	Cyclic Loading Analysis	Fatigue assessment of pipelines based on operating pressure fluctuations and cycle history				
Line Patrolling	Create Routes	Create custom routes (5/10 Km) for Patrolling	Yes	Yes	Yes	Yes
	Assign Routes	Assign routes and shifts to patrollers				
	Line Patrolling App	For Patrollers to monitor the routes and enter any observations				
	Supervisor Dashboard	To monitor daily patrolling and observations				
Direct Assessment	ECDA	CIPS, DCVG, ACVG, Dig Site selection	Yes	Yes	Yes	Yes
	ICDA	Flow Regime, ICP Modelling, Liquid Holdup analysis				
	SCCDA	Stress and Strain considerations, SCC hot spots, validation				
Quantitative Risk Assessment	Risk Models Configuration	Configure threats and default values	Yes		Yes	Yes
	Risk Assessment	Configure and map risk parameters with integrity survey inputs				
	Risk Management	View risk results to carry out future repairs and mitigations				
Dashboards	Management Dashboards	Overall summary of assets and integrity surveys, risk hotspots	Yes		Yes	Yes
	Cross Module Visuallsation	Alignment sheet view of all surveys - CP, ILI along with major pipeline features - thickness, elevation, crossings etc				

GET IN TOUCH

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