Xenia
SOFTWARE SOLUTIONS

OIL & GAS

SERVICE AREAS

- ❖ Oil Movement & Accounting
- ❖ Document & Asset Management
- ❖ HSE Software Applications
- ❖ Dashboards & KPIs
- ❖ Mobile and Cloud Applications
- ❖ Innovative Applications (Computer Vision & Artificial Intelligence)

SOLUTION AREAS

- ❖ HR
- ❖ Administration / Purchases
- ❖ HSE
- ❖ Maintenance / Technical Services
- ❖ Production
- ❖ Planning / Performance Analysis

Solutions integrate with platforms from most relevant vendors:

- • Aspentech
- • Honeywell
- • IBM
- • OSISoft
- • SAP
- • Microsoft
- • Oracle

Xenia's solutions **maximize company performance** through a complete and detailed information which correlates and integrates processes, allowing **more efficient and reliable operations**. Its **long experience with the major Oil & Gas Industries** makes the company a preferred partner for **innovative services and solutions**, thanks to its **strong technical skills and expertise in different operational areas and industrial processes**.

With **fast time to market**, Xenia provides the **best-in-class solutions** based on the most innovative software technologies to best satisfy its customer's needs: **Machine Learning**, **Artificial Intelligence**, **Computer Vision** and **Image Based Localization** are used to provide advanced tools to **increase safety at work** in potentially dangerous environments and **improve worker efficiency**.

At the same time, Xenia supports customers on site for developing customized solutions, as well as for providing System Integration, Maintenance and Technical support services.

- Oil Movement & Accounting
- Document & Asset Management
- HSE software applications
- Dashboards & KPIs
- Mobile and cloud applications
- Innovative technologies (Computer Vision & Artificial Intelligence) in collaboration with research institutes

Xenia Progetti activities in OIL companies cover different operation areas. Solutions are installed and integrated in the key components of the Refinery ICT platform.
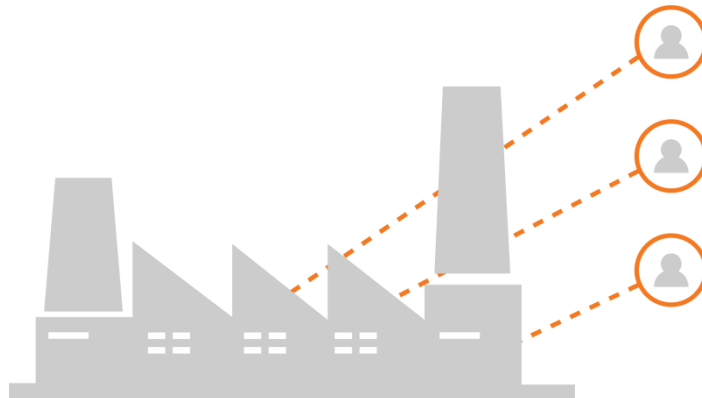
MAIN SOLUTIONS

OIL MOVEMENT AND ACCOUNTING

Oil Movement and Accounting is an integrated software suite for the management of all fiscal-relevant operations carried out by the refinery, according to Italian INFOIL regulation.

The suite provides application modules for the planning of product movements carried out by the refinery (fiscal operations, shipments and receipts), the management of the accounting of the operations and issuing of all fiscal-relevant documentation, calculation and tracking of the crude mix on tanks, inventory processing of crude oil and finished products.

Integrity checks ensure consistency across operations, avoiding errors and ensuring compliance with regulatory requirements.

The solution interfaces with other refinery systems to get process data, laboratory analysis, tank information and other data relevant for processing.

The suite runs on-premises as well as on Microsoft Azure, making use of native cloud services, like App Services, SQL database, Logic Apps, and other Azure services.

Key features

- Scheduling of operations relating to shipments, receipts and internal movements
- Management of the daily work plan
- Accounting of fiscal operations execution
- Issuing of all fiscal-relevant documentation to comply with local regulatory
- Management of information exchange between the vessel and the ground (time logging, timesheet, checklist, reports)
- Inventory processing of crude oil and finished products
- Calculation and tracking of the crude mix on tanks
- Material balance
- Calculation of safety stocks
- KPIs and reports

CONTRACTORS MANAGEMENT

Contractors Management is an application suite that allows to manage presences and activities carried out by personnel of third-party companies operating within the refineries, with mostly attention to safety policies.

The suite is part of the suppliers control process, from their qualification to the monitoring of their documental regularity in time.
It also supports workplace safety, providing transversal tools for the management of entry authorizations for both personnel and vehicles, verifying non-conformities of works, documentation completeness and final balance of hours worked in economics.

Main modules of the suite are listed below.

Entrance authorization for contractors
- Management of the process to grant permissions to external contractors for works inside the site
- Management of all the data and documentation related to the contractor, its employees and work vehicles
- Integration with existing processes (Orders, Access Control)

Documentation interchange
- Management of all the documentation exchanged between the industrial plant and its contractors, within the different stages of a project (RFP, Contract, Payments, etc.)
- Ensure completeness and up to date of documentation along with regulatory compliance

Accounting of the work balance
- Management of working labour declared by external contractors during maintenance activities
- Automatic calculation of the final work through integration with ERP and Access Control systems

ASSET MANAGEMENT

The Asset Management suite is based on the AMICO application platform (Asset Management for Industrial COmplex plant), a system that allows to catalog assets and technical documents used in manufacturing companies equipped with medium-large industrial plants.

The solution also integrates workflows related to update processes, providing an environment for managing changes performed in a collaborative way with external contractors.

The native integration with SAP and other asset management systems, combined with the ability to extend the suite with new "Add-Ins" that use the asset database, makes the platform adaptable to any context.

Document & Asset management "core" features

- Centralized repository of all the assets concerning the industrial process and their related documentation
- Management of relationships between assets and between assets and documents, allowing hypertextual navigation of data
- Hypertextual navigation of CAD documents
- Data update driven by customizable workflows to allow cooperative actions between internal actors and external contractors

Advanced features

- Georeferenced navigation of assets on map
- Mobile application to allow instant access to data and documents in the field
- Open architecture to allow implementation of addons for specific purposes (i.e. register of regulatory deadlines for equipments)

OPERATION MANAGEMENT

In this area, the Operations Logbook is a tool for recording in digital format the handover referring to operations carried out in the workshift and, more generally, to all those activities carried out during daily operations.

The high reliability of the system, combined with its versatility, makes it a tool that can be used in any area and sector needing a transcription of activities during workshifts and a quick access to their data.

Key features

- Electronic drafting of the operations logbook containing all the relevant activities performed during the work shift
- Customization features allow the definition of different types of logbooks, depending on process needs
- Integration with several information systems (work permits, laboratory system, process data monitoring, etc.)
- High availability, works in offline mode if connection is not available
- Simple built-in workflow to bring critical issues to the attention of the next shift

Solutions in this area also include Dashboards and Mobile apps to support various operational processes, like:
- Alarms monitoring
- Monitoring, via smartphone, of the main activities and events of the refinery: processing units stopped and running, ships at berths, tanks with ongoing product movements, tanks under maintenance, weather and environmental control unit data, etc.
- Collection of measures in the field

SOLUTIONS FOR SAFETY AND SECURITY

Solutions provided in this area include expertise and tools for digitizing common refinery processes and procedures.

The Entrance Authorization for Visitors solution manages entry operations in an industrial site, where information procedures on relevant risks must be known and respected.
Using a tablet, the Visitor receives the training and takes a final test, also signing the test results and privacy-related documents. Through a web application, the security officer manages the queue of visitors, the check-in process, and issues entrance permittance.

The solution runs on cloud using a container-based architecture.

Key features

- Digitization of the entire process eliminating the use of paper
- Speed-up of external people entrance authorization
- Possibility to take the training in advance to speed-up the check-in process
- Digitally signing and archiving of all the documentation

Expertise in this area also cover the digitization of some common refinery procedures, like: Management of the periodic safety checks carried out in the refinery, Planning, execution and control of simulations relating to Emergency Plans (Top refinery events), Management of periodic training meetings required by local regulations.

EMISSION MONITORING

The Emission Monitoring System is a software application that collects data produced by environmental control units, calculates emissions of pollutants, checks compliance against established allowed limits and generates a set of reports according to national regulations. Data is also transmitted to local authorities as required by local regulatory.

Key features

- Calculation of emissions per hour, day and month
- Verification of compliance with the permitted limits
- Different calculation models (analyser or model)
- Data archiving and reporting
- Compliance to local regulations

INNOVATIVE TECHNOLOGIES FOR OIL & GAS INDUSTRY

Xenia Progetti provides the best-in-class solutions based on Artificial Intelligence, Augmented Reality and Computer Vision for industry operations and workplaces safety.

PIPES

Pipes is an artificial assistant able to support industrial sector operators with advanced features that improve efficiency and safety at work. The solution is based on the use of a wearable device (AI Wearable Assistant) which allows the employee to receive information and indications in Mixed Reality on the objects to be used and on the operations to be carried out (Object-Awareness Computing) in the various phases of work in all safety.

The artificial assistant uses innovative Computer Vision and Machine Learning technology algorithms in order to support employees engaged in technical activities in the field.

Future Evolution: Training, Action Anticipation, IoT technologies.

VIRTUAL REMOTE CONTROL

Augmented Reality remote assistance enables product experts to visually guide and collaborate with field technicians.

The solution enables workers to gain necessary data, documents and instructions in real-time through Mobile-Access Edge Computing and improves their efficiency. It allows to anchors notes to insert key information relative to specific maintenance session. Notes can be shown to each technician acting on the field.

The result is an important reduction of reaction times and travel costs for experts who no longer need to be present in the places where maintenance is carried out.

SAFER

Safer exploits innovative technologies as a key factor in work accidents prevention, above all where workers are acting in risky environments and with dangerous vehicles, such as in constructions and road construction sites. Safer is a cross market solution for improving safety standards in indoor and outdoor environments: its security tools allows to drastically reduce risk factors.
It immediately detects anomalies in work process, including movements to unauthorized areas, prohibited actions and undue delay in execution times.

In the same way, the solution allows to identify technicians on the field and to check if they are wearing the mandatory PPE correctly.

Xenia has also developed interactive and non-interactive tools suitable for real-time monitoring and notification about events identified as real risk or potential danger for workers: SANIO, GOAL.

SANIO

Sanio allows the improvement of safety in work places: it provides very innovative tools to avoid accidents, prevent risk factors, verify machineries positioning and ensure the use of personal protection equipments (PPE) by workers.
Thanks to Machine Learning, Artificial Intelligence and Computer Vision, Sanio is able to analyze a specific work area and to identify potential dangers for workers.
The solution can monitor a number of critical situations done by workers, such as:
- being in dangerous positions
- not wearing helmets or other personal protection equipments
- moving outside their working area
- lying on the ground
- wrong storage of machineries after used.

The system processes data received and converts them into useful information to workers, in order to ensure safety standards and reduce accidents.

GOAL

Goal is a V2X solution for the monitoring of health and attention of driver while driving a vehicle.
The system analyzes video images received from a camera installed on the vehicle, in order to detect and report distractions or abnormal behavior of the driver.

Goal continuously monitors biometric parameters and detects driving performance in the road and traffic.
The best solution result is to reduce accidents due to driver distraction or distress by preventing the cause and alerting vehicles and people in the nearby about a potential imminent danger.

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