MONITORING SOLUTIONS FOR
Pipeline & Process
SMART MONITORING SOLUTIONS FOR PIPELINE & PROCESS

› Informed decision making using an integrated monitoring system across all pipelines, process facilities and critical infrastructure.

Kifta has worked together with customers and partners for more than 5 years to develop security, process efficiency and asset integrity solutions for the petrochemical and industrial process industry.

Whether it is a remote long distance pipeline with limited security or an inner city pipe at risk of accidental damage from 3rd party construction or a process facility with condition monitoring requirements, Kifta’s unique and versatile range of systems can provide a solution for you.

› MTBF* of over 31 years for key components

*MTBF - Mean Time Between Failures

› More than 50 installations worldwide

› 1,000 km of installed fiber being monitored
# THE BENEFITS OF INTELLIGENT SECURITY AND INTEGRITY SOLUTIONS

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>DAS monitoring for Third Party Intervention (TPI) detection before the event occurs, whether it is malicious (terrorist, product theft) or accidental (3rd party digging)</td>
<td>Prevention of product theft, improved safety, lower maintenance and lower repair costs</td>
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<td>Precise, real-time and actionable information at all points on the pipeline to within 5m of the event</td>
<td>Rapid and focused decision making which improves custodianship over pipeline thus reducing risk to reputation damage</td>
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<td>Proactive risk based maintenance using accurately measured real-time information</td>
<td>Optimization of planned maintenance program and reduction in unscheduled downtime</td>
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<td>Smart condition monitoring leads to effective prediction and prevention of equipment failure</td>
<td>Reduced downtime leading to improved return on investment and delayed capital spending</td>
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<td>Leak detection using both Distributed Acoustic Sensors (DAS) and Distributed Temperature Sensors (DTS)</td>
<td>Early detection of leaks can prevent environmental damage, avoid fines and risk to reputation</td>
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<td>Utilize existing telecoms infrastructure along pipelines working closely with telecoms/SCADA installer</td>
<td>Ease of installation lowering overall cost of ownership</td>
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<td>Smart software enables high probability of detection with a very low probability of false alarm activation</td>
<td>Complete coverage of remote assets with limited capital expenditure and ability to quickly react to any threats before they occur</td>
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Application areas

› Third Party Intrusion (TPI) detection (intentional sabotage or unintentional digging/drilling in vicinity)
› Perimeter Intrusion Detection System (PIDS)
› Pipeline Inspection Gauge (PIG) tracking
› Condition monitoring of pipe and valves
› Seismic and landfall detection
› Pipeline leak detection both for liquid (hydrocarbon, water and chemical) and gas
› LNG terminal and pipeline security and integrity
› Vessel integrity (leak detection and skin monitoring)
Kifta’s extensive range of sensors and integrated smart software solutions, combined with our ability to interface with industry standard communication protocols, enable us to tailor the system to meet your specific needs.

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<th>Monitoring Scenario</th>
<th>Fiber Technology</th>
<th>Smart Software</th>
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Kifta services

Kifta has the expertise and personnel to provide services with the following disciplines, to ensure the system performs to your needs:

» Front End Engineering Design (FEED)
» Project management
» System installation and commissioning
» Product training
» Support and maintenance
Large amounts of data can be generated at all points along your assets. However, the key to getting valuable decision making information is linked to having smart software algorithms that can quickly and effectively interpret and simplify the data.

**Condition monitoring**

The software can be configured with specific thermal models for your vessel or pipeline and the surrounding environments to provide early warning and to allow you to run an efficient risk based maintenance program.

**Event classification & smart zones**

Kifta has developed a library of event classifications to provide the system with the intelligence to identify the following and to minimize nuisance alarms:

- Mechanical digging and drilling
- Vehicle (light and heavy distinction)
- Personnel movement and manual digging

Each section of pipe or facility can be configured as a specific smart zone with algorithms tuned to the specific environment.

**Integration and action**

Once you have the information, you need to act. Kifta’s system can be seamlessly integrated into existing systems and can activate surveillance or deploy rapid response teams.

Distributed fiber optic sensing generates very large amounts of data at all points along your assets. However, the key to getting valuable decision making information is linked to having smart software algorithms that can quickly and effectively interpret and simplify the data.

**SMART SOFTWARE FOR INTELLIGENT DECISIONS**
COMPLETE COVERAGE FOR REMOTE LOCATIONS

› Intelligent solution that provides complete protection to all points of your assets and critical infrastructure wherever you are.

Valuable assets are often in the most remote areas covering hundreds or thousands of kilometers.

Often the damage is not apparent to the pipeline operator for weeks risking extensive environmental damage or product loss.

The Maxview advantage

Kifta’s Maxview software platform pulls it all together. It is a fully customizable SCADA software, with advanced visualization and the ability to consolidate and visualize multiple systems from multiple sites to a web based interface. Maxview can handle multiple DTS and DAS systems (also 3rd party DTS/DAS systems) and 3rd party sensors and data feeds.

Maxview also has the capability to export seamlessly to any 3rd party DCS and control system. We have interfaced with multiple control systems (Honeywell, Siemens, Emerson, ABB) and using many protocols can customize according to your needs.
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- 10,000 SQM STATE-OF-THE-ART PRODUCTION FACILITY
- CLASS 100 CLEANROOM AND TESTING FACILITIES
- MORE THAN 30 R&D ENGINEERS

Nigeria

America

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