INETEC

Advanced NDT Solutions for Oil & Gas Industry

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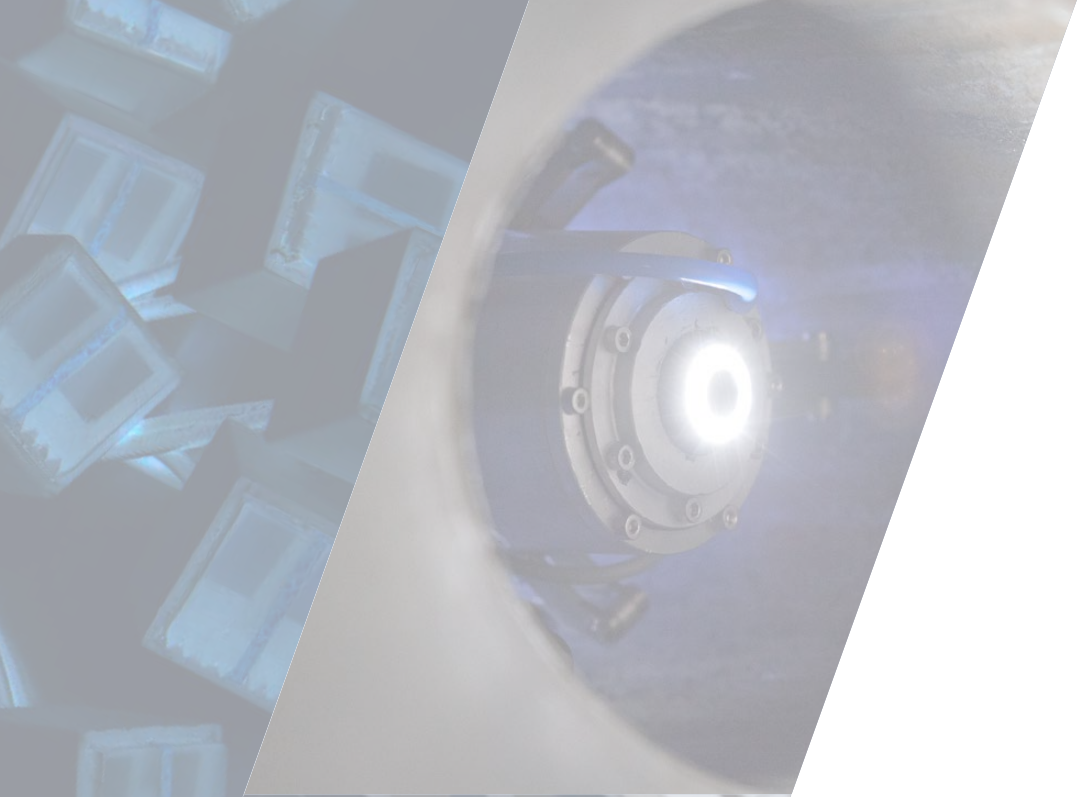


ABOUT US

Creating reliable future

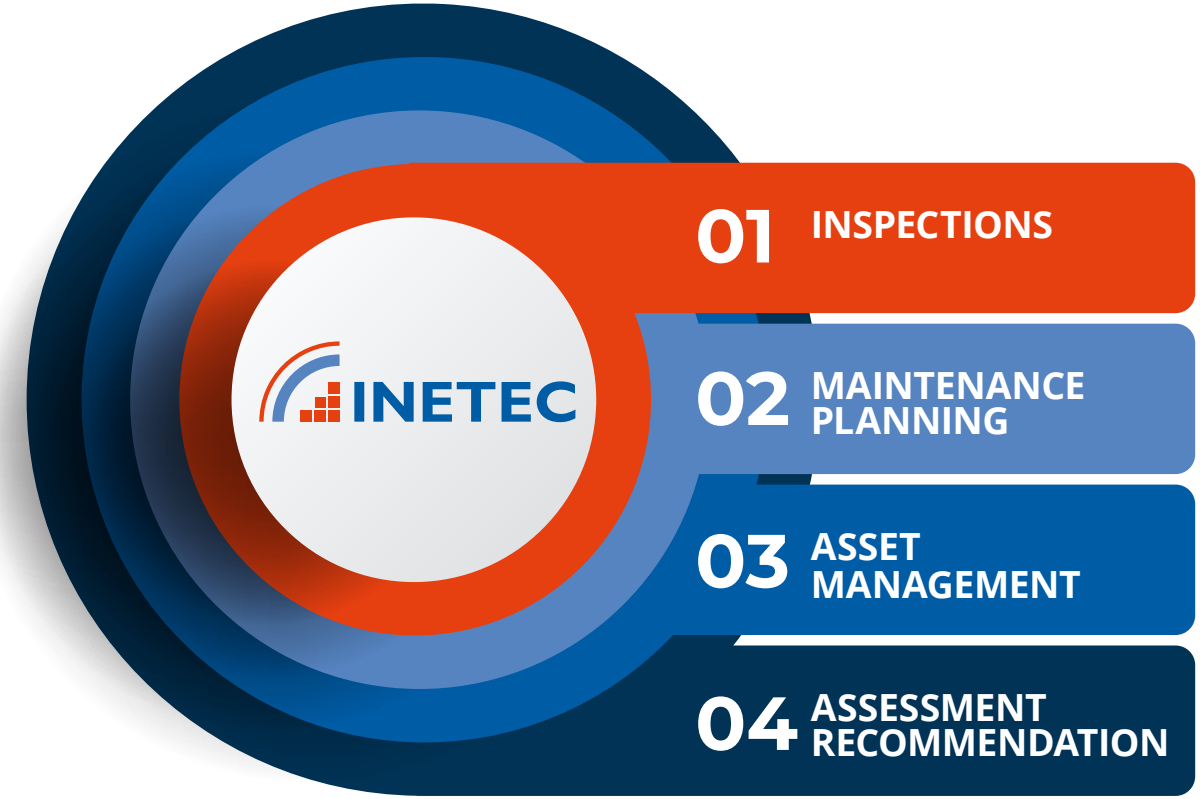
INETEC is a high-tech company which develops and manufactures robotic systems, instruments, software and probes for the oil and gas, nuclear and aerospace industries as well as medical robotics in the global market. In more than 30 years in business, we have conducted a series of inspections of vital components of nuclear power plants around the world and taken part in large-scale projects such as ITER and DONES.

We also participate in numerous international research and development projects in cooperation with universities and scientific institutions. Our team comprises of highly qualified people with commitment to quality and integrity towards all stakeholders. Guided by the motto “Creating reliable future” we are proud to ensure the safety of all of us!

Why INETEC?

- In our long-term presence in the industry we have perfected our services and our own cutting-edge technology.
- We deliver highly customized, innovative and cost-effective solutions to users.
- Our products and services are made and provided by highly educated and qualified personnel.
- We are committed to quality and integrity and are driven by our six core values: safety, innovation, responsibility, efficiency, flexibility and passion.
- Our references affirm the validity of us being a trustworthy business partner.

INETEC Services in Oil & Gas



Our Capabilities

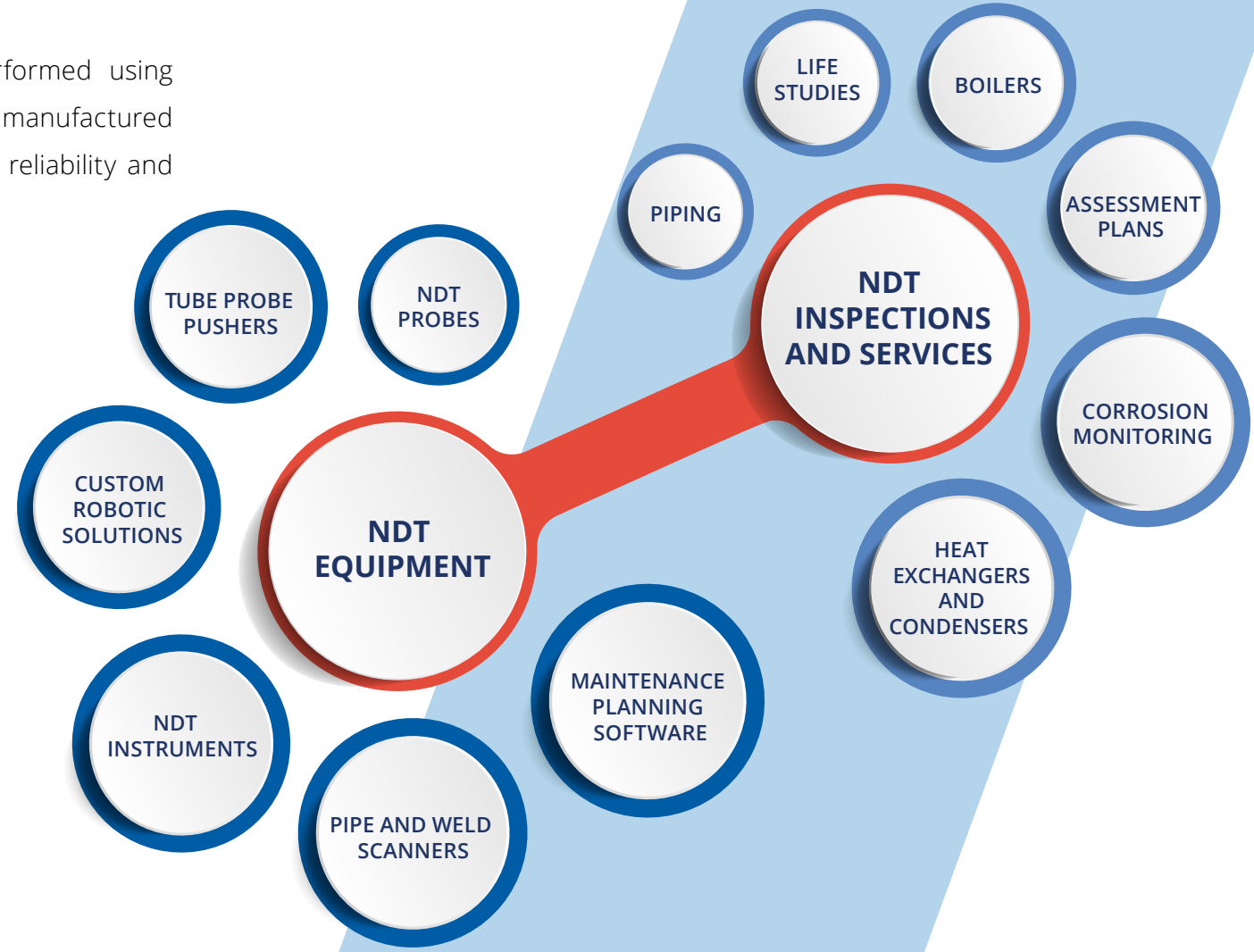
INETEC's capabilities in Oil & Gas are based on comprehensive and flexible inspection solutions that can be applied to fossil power plants, refineries or pipeline facilities and ensure prompt completion and top performance of integrated NDT service. Complete range of NDT solutions makes gathering all the necessary information for managing company assets easy and reliable.

Along with high customization of products and services, our flexibility as a middle-sized company enables a customizable approach to any inspection meeting any client requirements. Our long-term presence in the energy industry and more than 30 years of experience in the most challenging environments make us vastly knowledgeable in satisfying all the criteria of our clients and making them more efficient.

- Seamless NDT service
- Innovative solutions that offer inspections of highest capability
- Inspection process optimization
- Component life assessments
- Recommendation for component repair/ replacement
- Risk-informed inspection methodology
- Assessment of client inspection strategies, practices and procedures

Services and Equipment

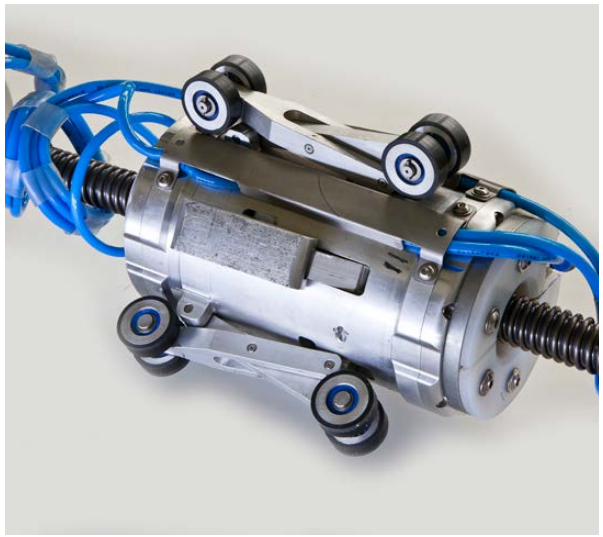
All INETEC inspection services are performed using INETEC designed, developed and manufactured inspection equipment offering maximum reliability and integration of inspection systems.



Zenith

ZENITH is a flexible, self-driven, remote-controlled robot designed for ultrasonic, eddy current and visual inspections of unpiggable pipelines. Different modules provide inspection of carbon steel and/or austenitic steel pipelines started from 150 mm ID and with 1.5 diameter elbows. It is a self-driven device capable of inspecting pipelines throughout their entire length, even in a vertical configuration.

Zenith

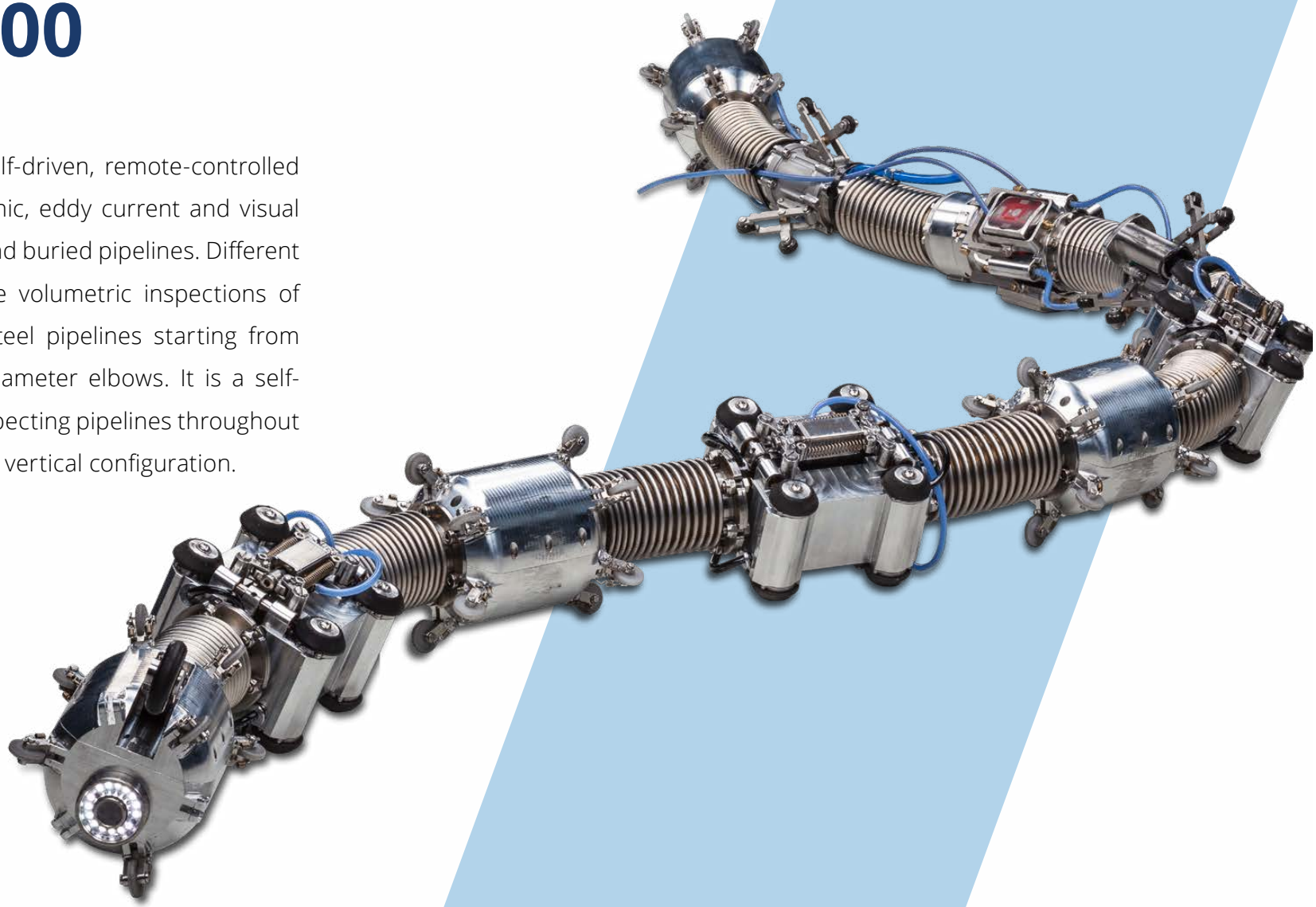


Key Features

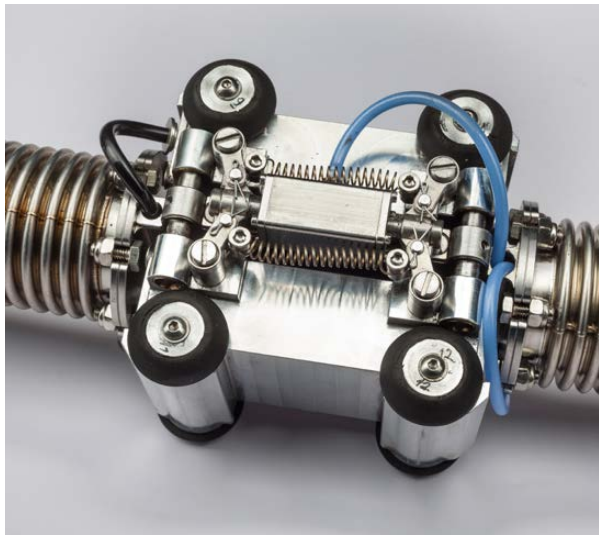
- unique, custom-made lead screw allowing high force drive through the pipeline and elbows
- smooth passing through demanding shapes of pipelines
- complete volumetric examination
- inspection module containing ultrasonic and eddy current sensors
- P&T camera mounted on the front of the manipulator
- used for pipeline ID visual inspection
- possibility of utilization in dry pipelines due to self-water supply
- IP68 protection level provides inspection of the pipelines filled with water
- position verification
- user friendly manipulator control software
- manual, semi-automatic and/or automatic mode of operation
- linear axial speed up to 50 mm/s
- inspection module rotating speed up to 20˚/s
- possibility of manual manipulator retraction from the pipeline

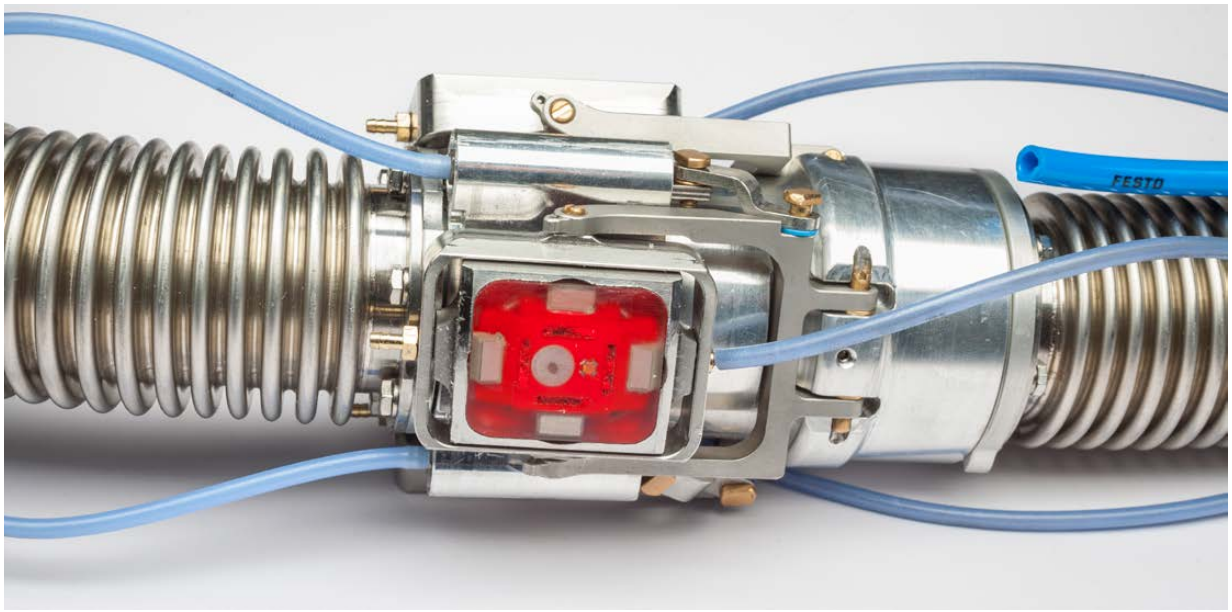
Zenith 100

ZENITH 100 is a flexible, self-driven, remote-controlled robot, designed for ultrasonic, eddy current and visual inspections of unpiggable and buried pipelines. Different inspection modules provide volumetric inspections of carbon and/or austenitic steel pipelines starting from 100 mm ID and with 1.5 diameter elbows. It is a self-driven device capable of inspecting pipelines throughout their entire length, even in a vertical configuration.



Zenith 100





Key Features

- smooth passing through demanding shapes of pipelines
- complete volumetric examination
- inspection module containing ultrasonic and eddy current sensors
- P&T camera mounted on the front of the manipulator used for pipeline ID visual inspection
- possibility of utilization in dry pipelines due to self-water supply
- IP68 protection level provides inspection of the pipelines filled with water
- position verification by axial encoder
- user friendly manipulator control software
- manual, semi-automatic and/or automatic mode of operation
- linear axial speed up to 100 mm/s
- inspection module rotating speed up to 20˚/s
- possibility of manual manipulator retraction from the pipeline

Manual Piping Inspection

INETEC offers manual piping inspection solutions for three types of NDT methods - ultrasound testing, eddy current testing and surface testing.

The latest NDT equipment is applied and personnel and procedures are acknowledged in numerous nuclear power plants worldwide.

Manual Piping Inspection

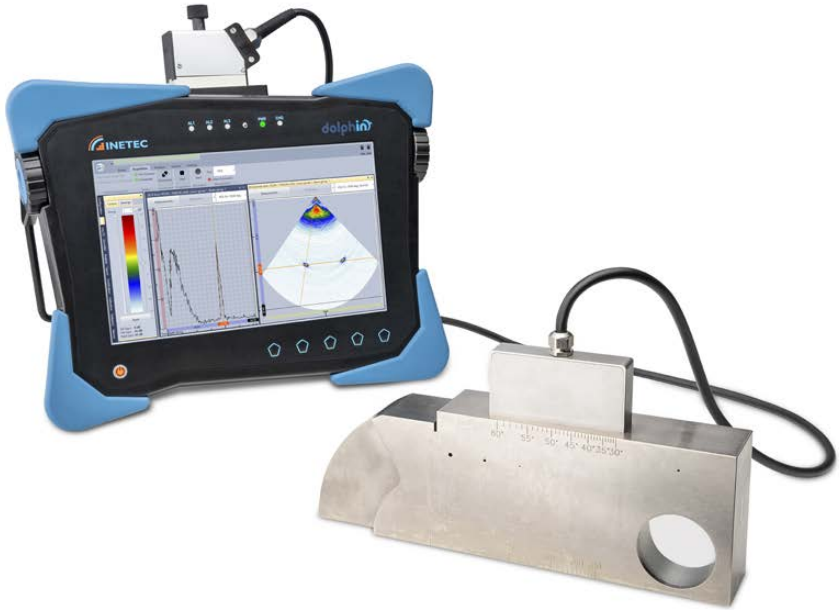
01	UT	TOFD	Phased array	Pulse echo	Pitch catch
02	ET	Eddy current	PEC	Pulse echo	Carbon steel weld testing
03	SURFACE TESTING	Remote visual testing	VT	PT	MT

DOLPHIN^{P}

DOLPHIN^{P} is a portable battery powered phased-array ultrasonic instrument with 12.1″ touchscreen. Our advances in phased-array technology are now available in portable industrial enclosure with the same intuitive workflow provided by the powerful SignyOne Touch software.

Find out more about
DOLPHIN^{P}

DOLPHIN^{P}



Key Features

- compact industrial design with 12.1" touchscreen
- dual Li-ion battery compartments, hot-swappable
- dual wheel encoders with click-to-select function
- USB, Ethernet, HDMI video out
- SignyOne Touch software embedded

Same Powerful Dolphin Specifications

- high pulsing power (200 Vpp) on all PAUT channels
- fast sampling frequency (125 MHz)
- multiplexed architecture 32 x 128 channels + 4 additional mono channels

Heat Exchanger and Condenser Inspection

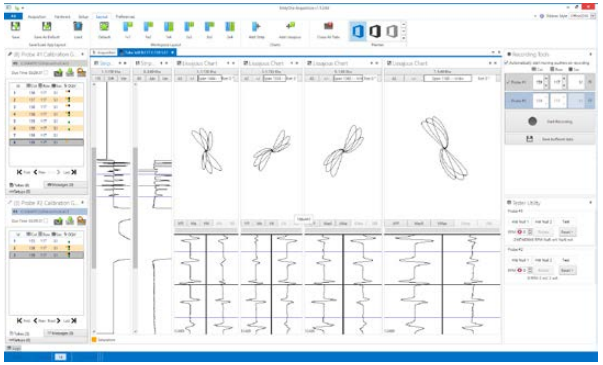
Heat exchangers (HX) and condensers are inspected during annual plant outages using: ET, MFL, RFT, IRIS.

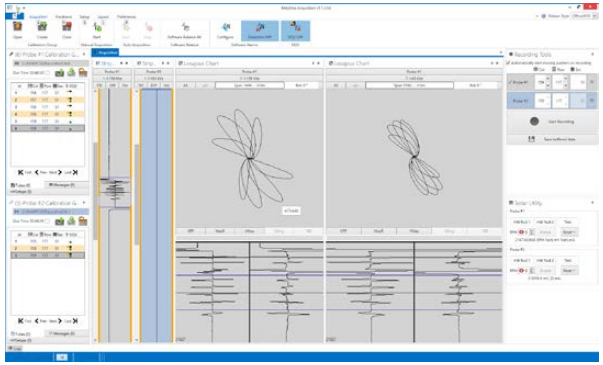
Eddy current based inspection technique is the oldest and most reliable way of quickly checking the condition of the entire tube length for degradation. Depending on the type of tubing material (non-ferro magnetic or ferro-magnetic) different technology can be applied for baseline full scope inspection and more complex solution like IRIS or EC array probe for defect confirmation, sizing and characterization.

Heat Exchanger and Condenser Inspection

Typical Inspection

- Baseline bobbin inspection
- Data analysis in accordance with EPRI programme
- MRPC or array probe inspection for detailed assessment and defect characterization
- Generation of plugging list based on client criteria
- Preparation of life assessment study for any inspected HX





Inspection Equipment

USHER is designed for eddy current inspection of various types of heat exchangers. Modular construction allows very easy and quick assembling and disassembling, as well as handling in narrow space.

USHER

Find out more about
USHER

Inspection Equipment

USHER pusher + EC instruments + probes

- All-in-one design pusher is the center of the HX eddy current inspection system
- Implementation of different eddy current instruments
- Pusher supports probes of different diameters
- Lightweight
- High inspection speed (2m/s)

Inspection Equipment

Falcon ^{C}//
A new generation light weight and versatile eddy current instrument with an integrated battery and industrial user interface with 7” display for on-site testing.

Find out more about
FALCON^{C}

Inspection Equipment

Falcon ^{D}//
A new generation eddy current instrument providing higher performance with exceptional signal quality even in the most demanding industrial environment.

Find out more about
FALCON^{D}

Falcon ^{S}//
A new generation high performance eddy current instrument with an integrated battery for portable applications.

Find out more about
FALCON^{S}

Boiler Inspection

- As boilers undergo great temperature and pressure fluctuations, it is important to carry out maintenance procedures in a timely manner
- Ability to safe climb on tube's wall
- Works on carbon steel and cladded materials
- Integrated encoders
- Visual inspection monitoring (camera usage, lighting)
- Heavy duty environment (dust, corrosion)

More information available on specific request.

Corrosion Monitoring

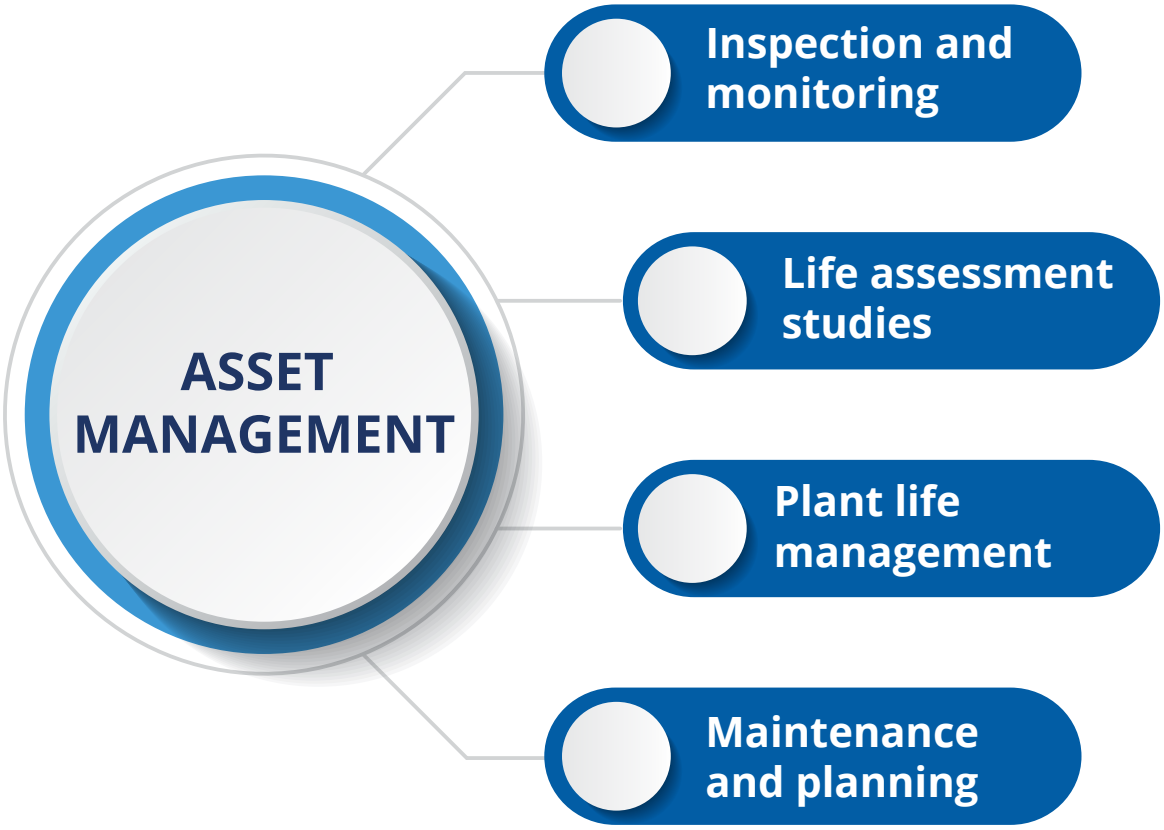
- Due to chemical changes, components can deteriorate with time and cause performance failure, which is what corrosion monitoring aims to prevent
- Ultrasound transducers resistant to high temperatures, designed for 0-degree measurements of thickness and for corrosion monitoring
- Possibility of permanent installation on pipes and continuous data collection
- Wide continuous operating temperature range for different online monitoring requirements
- Efficient acquisition of asset status, possibility of cost-effective predictive maintenance
- Decreases the staff exposure to hazardous environments
- Enables monitoring of inspection anomalies which allows safe operation of critical infrastructure

More information available on specific request.

Assessments and Life Studies

INETEC offers the service of the full asset management cycle. Maximum availablity of plant resources is ensured through combination of engineering, inspection and maintenance services on various plant components.

Through a continuous cycle of conducting inspection and maintenance activities, determining the remaining life of plant components (heat exchangers and piping) and implementing all available data in the plant life management program, improvements of plant reliability and safe operation can be achieved. All conclusions and feedback are then implemented in inspection and planning activities for the next operation cycle.



GIMIS Software

Comprehensive yet user-friendly software tool that integrates all processes, functions and data related to planning, administrating and executing plant components inspections.

Component data management including information design, locations, examination requirements, documentation, drawings, previous inspection results, with embeddable images and files.

GIMIS Features

- GIMIS is an ASP.NET web application
- Data is stored on real SQL Server, which can be located in the plant/utility enabling both on-site and remote access
- SSL protocol (256-bit) is used to encrypt all data transferred over the network
- Read/write transactions are registered and securely stored, including user, timestamp and all relevant transaction data

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