THEIA

THEIA Mission Statement
To empower integrity teams, capture the value of data, prevent failures and optimise asset performance

THEIA is your integrity management solution, developed by Penspen in collaboration with QiO Technologies. THEIA is a new digital platform for engineering analytics and services, designed to provide timely and critical information for the safe and efficient running of oil and gas pipelines.

At Penspen, we recognise the biggest challenge our industry faces is uncertainty. Ageing pipelines mean greater risks, which are in turn set against a background of cost reductions and increased regulatory demands. Loss of skills and a lack of new talent add to the strain on existing resources. THEIA represents a new way of thinking to address these constraints, reduce uncertainty and help minimise unforeseen failure, now and in the future.

THEIA combines Penspen's years of experience, industry knowledge and quality assurance capability with QiO Foresight Maintenance® technology, to provide a complete picture of pipeline assets under a range of environmental and operating scenarios. Using data analysis in tandem with computer models based on Penspen's industry-wide expertise, THEIA delivers insights into pipeline integrity within a predictive analytical environment for a fast and more accurate prognosis.

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THEIA

Key Benefits

• Cloud based integrity platform
• Data agnostic - accepts and compares inspection data from a range of different vendors simultaneously
• Speed to insight - the whole process from upload to report generation is automated, and is measured in seconds rather than weeks or days
• Future proof - to fully harness industry 4.0, THEIA is a cloud solution that can ingest all available data, live or quasi-live so that engineers can gain important insights and make better decisions in optimising asset performance
• Single sign on
• Comprehensive support
• ISO 270001 compliant

THEIA's cloud environment allows you to draw on our expertise at Penspen in an almost exponential manner but with you in control over the execution and monitoring of your pipeline assets. Only cloud-based solutions have the capacity to handle digitised integrity analytics on this scale, as well as the advantages of potentially limitless processing capability and software that is always up to date.

With THEIA, you have a secure, accessible and user-friendly environment where big data sets are efficiently and easily stored, analysed and shared.

Various monthly subscription bands are available, depending upon the scale of requirements and processing capacity. There is also the option to call on Penspen's support services and independent QA verification by our engineers

THEIA is a subscription offering, allowing our clients to select the functionality that best suits their needs and manage their on-going integrity costs.

THEIA functionality is differentiated on the following basis:

• Data management services
• Assessment modules
• Remaining life modules
• Field work
• Risk
• Management
• Visualisation
• Interacting dent strain analysis
• Data administration
• User administration
• Training
• Technical support

Further information about the functionality or a demo can be arranged on request.

Industry Quadrilemma

AGEING ASSETS 1
Increased risk of failure

SCARCE RESOURCES 2
It's not just the reserves, it's the people

MORE LEGISLATION 3
Dealing with increased workload

NEW FINANCIAL OUTLOOK 4
Adapting to change

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THEIA will deliver our clients the following features and functionality:

- Document repository
- Correlation of ILI
- Estimate CGR from ILI
- Estimate remnant life of features
- Dent strain analysis
- Estimate future bending strain from ILI analysis
- Repair/re-inspect planning
- Data export
- eLearning
- Calculate CGR from fluid properties/other factors
- Strain analysis of interacting dents
- ILI dig verification/validation
- Full API 579
- Full API 1102 plus alternative Penspen methodologies
- Adaptive risk assessment using Penspen methodology
- Competency assessments & targeted learning plans
- Alternate data integration
- Technical library
- Risk assessment & management (API 1160 etc.)
- Pressure vessels & piping
- GIS integration (ESRI)

- 3D modelling
- KPI tracking dashboard
- PODS compliant export
- SCC analysis
- Free-span analysis
- PDAM2
- Direct Assessment
- Full probabilistic assessment, e.g. SRA
- Directed learning & webinars
- Competency certification

Mainly hidden from view and traversing vast distances, pipelines can seem indeterminate structures subject to the vagaries of geographical and climatic conditions. THEIA takes inspection data to transform these into tangible frameworks that can be analysed using digital methodologies and algorithms.

With THEIA, you will be able to manage the integrity of your assets in accordance with international compliance standards to address defects and prevent failures, while at the same time ensuring maximum security for all your critical data.

Complex data collected using different software products can be easily integrated within THEIA for a seamless and comprehensive overview, generating computer simulations that can be analysed under a range of assumptions and what-if stratagems.

Reports on which to base a prognosis can then be produced in minutes rather than weeks.
The platform also provides access to Penspen's consultancy and training resources, including an e-learning library equipped with Asset Integrity Management modules that we developed with Northumbria University, as well as helpful guides on using THEIA.

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