

## The Structured Approach to Asset Management™

PIMS has a proven track record in adapting established Integrity Management practice to suit your Oil & Gas Process Facilities. This reputation was established when we reinforced our Integrity Management experience with Operating Reliability Systems, applied Management Processes and Continuous Improvement Methodologies to create what we have termed as *The Structured Approach to Asset Management™*. Our game-changing services enable you to apply an effective and efficient System to ensure the Integrity & Reliability of your Process Facility.

We group the Elements of our Installation Reliability & Integrity System (IRIS) for Process Facilities into four Components, described below; we complement these with Programme Support Elements described on the back cover of this brochure.

### Strategic Planning

Within the industry, we proved the value of *The Structured Approach to Asset Management™* when we helped Oil & Gas leaders to make their businesses better. By implementing our set of Strategic Planning Services you can safeguard the performance of your Facilities & Installations and make progress towards your Performance Objectives & Goals.

Our approach enables you to demonstrate the effectiveness of your configured Integrity & Reliability System by coupling the day-to-day activities of your Asset Management Team with your wider business strategy. The PIMS Strategic Planning Services help you practice continuous improvement within a stronger, more focused Asset Management regime.

### Maintenance Execution

PIMS have developed a series of elements as Maintenance Execution Services that support you to identify & integrate workflow, supervise task completion and review the incremental progress made toward your Performance Objectives & Goals. Our services underline the fact that we work to the rhythm of a continuous improvement cycle and wish to implant this rhythm into your Asset Management operation with effective results. Most of your budget is spent on the execution of your Maintenance & Inspection Plans, we therefore offer Maintenance Execution Services to ensure that this expenditure is properly targeted and has maximum, measurable impact towards your Performance Objectives & Goals.

### Reliability Methodologies

PIMS have combined elements to structure Reliability Methodology Services that enable you to shape the most robust Inspection & Maintenance Execution Plan for your Process Facilities. You can apply these Services to assess Criticality, then identify the most effective and efficient methodologies that overcome the obstacles to your Performance Objectives & Goals.

Fully consistent with API Standards 570, 571, 574 & 579, these Services have been developed within the context of our *Structured Approach to Asset Management™*. This will ensure that your Integrity & Reliability Programme is effective, compliant and fully aligned with the Strategic considerations of your businesses.

### Inspection Services

Our Structured Approach to Asset Management yields additional value from your inspection campaigns; it frames them within the context of your Integrity & Reliability Programme. To minimise the expense and disruption of your inspection campaign we select and justify locations using proper risk considerations. To maximise the value of your inspection campaign we fully exploit the data to develop the most appropriate and effective Integrity Evaluations. We map the full picture of susceptibility within your facilities, distributing and utilising results to radically reduce your future inspection liability. With a proven heritage in Inspection and Integrity Evaluation, our engineers and consultants confidently deploy the appropriate skills, technologies, codes and processes to deliver your programme.



The elements that comprise these four Integrity Management Programme Components are described overleaf.



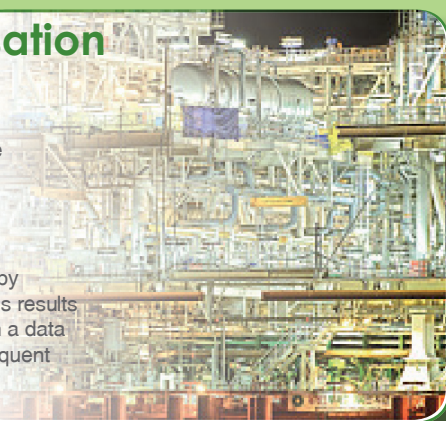
# Installation Reliability & Integrity Systems (IRIS) Service Elements

## IRIS Programme Design

We configure an Integrity & Reliability Process that is harmonious to the rhythm of your Asset Management Division and your Business. We also define the interfaces and identify the Programme Support Elements & Reliability Methodologies that ensure compliance to Process in a sustainable manner. We design the processes, specify the technology and identify the skills-sets required to operate an Integrity & Reliability Programme in a manner that is tailored to suit your Asset Management Regime. Our approach shows you how each clearly defined & executable task integrates to ensure that you meet your Performance Objectives & Goals on time.

## Segmentation & Prioritisation

In order to ease the execution of tasks throughout your Integrity & Reliability Programme, we organise your Facilities & Installations according to common attributes, relevant deterioration mechanisms, failure modes and effects. Using our own software, or in conjunction with established criticality modules, we perform this Segmentation quickly and efficiently — defining the units by which your Asset will be processed. We effectively complete this foundation by assessing each unit according to perceived risk. This results in a prioritised schedule of works that, complete with a data requirements plan, facilitates the execution of subsequent tasks across your Integrity & Reliability Programme.

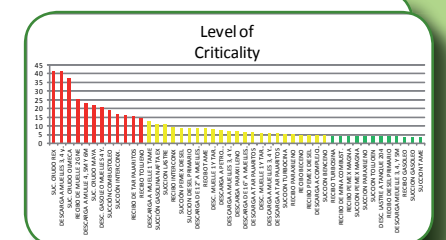


## Data Gathering, Review & Integration

We gather all the available information, enabling us to determine asset criticality (frequency of failure and consequence of failure), complete reliability methodologies and conduct fitness for service assessments at facility locations. We are comfortable to work with forms of data that originate either from within your organisation, from industry standards or from the OEM. We review each data element to ensure that it is valid; we then consider your Asset Management Philosophy and validate your Census of Assets, integrating data sets according to common tags and references. Finally, we organise this information for you: arranging uploading templates for subsequent criticality assessment works, setting data management protocols, file hierarchies, updating procedures, storage & collaborative access arrangements. This gives you a powerful Asset Management Database, one that enables you to maintain and sustain the value of your information over the lifetime of your Facilities.

## Criticality Assessment

You need to focus your resources on those areas that give you the best Asset Integrity & Reliability results, helping you reach your Performance Objectives & Goals. Our Criticality Assessment service provides the clarity to target these resources correctly. We perform the Assessment by evaluating all the organised and available data to produce credible and validated results. By using selected codes, together with our Criticality tools and procedures, we ensure that this process is consistent, replicable, transparent and auditable. Each assessment includes consideration of Production, Safety & Environmental factors, together with Failure Frequencies, Reparation Costs and Return-to-Service times. During the process, we rank all your Asset segments according to their Criticality, supporting each ranked position with information on the driving factors and appropriate metadata. In the spirit of continuous improvement, we can integrate the methodology as a module into your Integrity & Reliability Programme, for you to sustain thereafter. Criticality Assessments are crucial in shaping the subsequent Integrity & Reliability choices; we ensure that results are validated. We crosscheck sample segments to ensure consistency with established engineering practice so that you can be sure of the results, provided by PIMS, form robust and appropriate drivers for your Integrity & Reliability choices.



## Performance Goals & Objectives

To enable you to manage the expectations of your stakeholders & demonstrate continuous improvement, we work with you, examining Activity Completion, Safety, Uptime, Emissions and System Updates, to set relevant Key Performance Indicators. We also define the appropriate Goals relating to Client Satisfaction, Financial Performance, Process Compliance and the Growth & Development of your Asset Management Team. This equips you with the scale by which the progress of your Integrity & Reliability Programme can be measured.



## Asset Performance Evaluation

To express your Asset Management performance against the international norm, we benchmark the efficiency and effectiveness of your current Integrity & Reliability methodology. From this baseline, we then measure the real impact of your applied Integrity & Reliability Programme by tracking incremental progress toward your defined Performance Objectives & Goals.

## Maintenance Execution Management

We support you to reach your Performance Objectives & Goals by assembling the finest world-class talent, best-practice processes and leading-edge technology. Our industry position enables us to select and procure the most appropriate expert external resources to execute your Maintenance programmes. Successful execution is underlined by our ability to integrate and lead multidisciplinary teams in an effective manner — we can even integrate your own staff into our team throughout the Programme — ensuring that they can sustain your path to continual improvement after our participation is complete. From procurement through to final handover, we execute the works, supervise the completion of tasks and maintain our focus on the incremental progress toward your Performance Objectives & Goals.



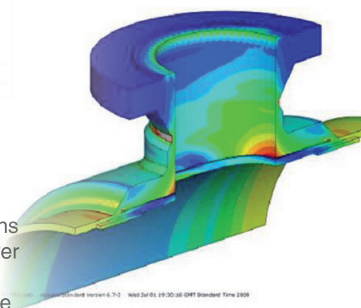
## Maintenance Execution Planning

Integration is key to the success of your Integrity & Reliability Programme. We integrate FFS outputs with both the outstanding RM outputs and the valid, scheduled Maintenance activities that you regularly apply to your asset. We ensure that your Plans reflect a well-defined Asset Management Strategy, that we can formalise for you. It is the Integrity & Reliability Process that drive the programme forward; a disciplined & structured approach is required. This is the approach that PIMS applies, as a process-driven company focused on the achievement of your Performance Objectives & Goals.



## Fitness for Service (FFS)

We perform assessments that examine your asset history, design and operating parameters; this elaborates our susceptibility studies, together with direct & indirect inspection results, to produce an Integrity Evaluation. We perform Fitness for Service (FFS) works upon inspection data to determine whether your Asset requires as-yet unscheduled corrective actions to restore condition. Additionally, we incorporate changes to the future maintenance strategies, RBI programmes and other actions identified to sustain the fitness for service of your asset over its intended life. By choosing PIMS, to complete both your Criticality Assessments and subsequent FFS's, you can be sure that the inputs to your Maintenance Execution Plans are current, valid and balanced.



## Reliability Methodologies (RM's)

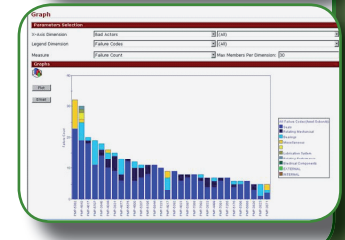
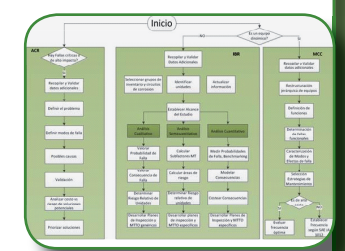
We use Criticality Assessment outputs, considered in the context of your Performance Objectives & Goals, to support the selection & execution of additional RM's. The RM Plan includes tasks and evaluations such as:

**Reliability Centred Maintenance (RCM)** - We reset our focus from segment level to equipment level allowing us to develop process diagrams and examine failure modes and effects on an equipment-by-equipment basis. You benefit from a fully evaluated maintenance strategy and frequency based on your cost and resources parameters. We then integrate each individual activity schedule into an optimised Facility-wide, Maintenance Execution Plan that aligns with your Asset Management rhythm.

**Risk Based Inspection (RBI)** - We conduct further data gathering and validation, examining your safety systems, reviewing historical inspections, maintenance records and failure & repair records. We then complete Qualitative Risk Assessments (QRA's) at an equipment group level and develop the appropriate RBI plans. Our structured approach is consistent with API Standard 510, 570 and 653 — you benefit from optimised expenditure and minimised disruption.

**Root Cause Analysis (RCA)** - We pareto and prioritise all potential failure modes and effects, then apply cost-benefit evaluation criteria to all potential solutions, ranking them to select the optimum set of activities. We are able to exploit your response to failure history and develop a pro-active set of activities, integrated within your forthcoming Maintenance Execution Plan, that will mitigate future failures and ensure progress towards your Performance Objectives & Goals.

By applying these Reliability Methodologies, we are able to develop effective, risk-based Maintenance Execution Plans, which underline the dynamic, continuously improving nature of the Integrity & Reliability Programmes that we apply.



## Direct Assessment for Process Facilities

Direct Assessment (DA), as designed by PIMS, is a powerful methodology that applies our Structured Approach to Asset Management. Our DA encompasses many of our Facility Integrity & Reliability Service elements, focused and applied to a selected group of your assets. We start by identifying susceptibility to damage & deterioration mechanisms, in line with API Standard 579; this enables us to target and apply preliminary inspection, in line with API 574. This preliminary inspection enables us to select, schedule and apply detailed inspection, in line with API 570 and 579. We then complete the works by delivering a robust Integrity Evaluation to you — including mitigation plans in line with ASME PCC-2 and re-evaluation programmes that comply with API 580 and 581. This approach elaborates the PIMS Segmentation & Susceptibility services while providing added value to you in a structured, progressive manner.

## Inspection

We can manage your Inspection programme as a turn-key package, executing the PIMS developed RBI plans. As such PIMS can count upon visual, magnetic and ultrasonic testing technicians certified up to Level III. We can provide inspection crew training services using our subject matter experts (SME's) who have countless man-years experience in planning, supervising and processing inspection campaigns around the world. We have proven pedigree and an established network throughout both the traditional and contemporary inspection industry. Couple this network with our unique ability to frame inspection programmes within the context of an Integrity & Reliability Programme and you will understand why PIMS is the intelligent choice for outsourced inspection services.

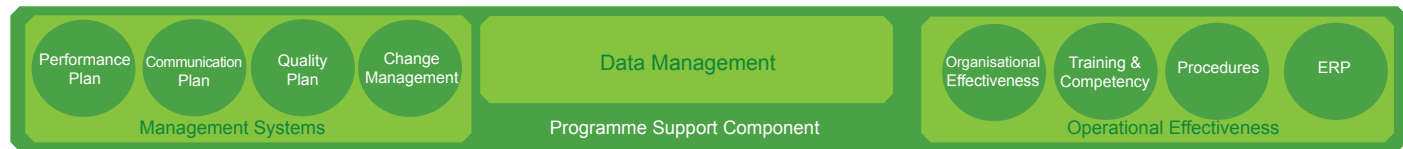




Our experience shows that an effective and efficient Integrity & Reliability Programme requires more than the elements arranged and assembled in the centre pages of this Brochure. To complete the package, we have developed a series of Programme Support Elements that enable you to successfully apply and sustain Integrity & Reliability in the spirit of Continuous Improvement, and:

- ✓ Develop the vision to anticipate and manage change;
- ✓ Provide direction with clear performance objectives;
- ✓ Commit to the quality improvements that your Programme will deliver;
- ✓ Manage the interfaces that allows information to flow across Divisions;
- ✓ Develop your personnel and build a vibrant skills mix;
- ✓ Make the appropriate provision to deal with emergencies;
- ✓ Build a dependable repository of effective Procedures;
- ✓ Exploit and sustain the full value from your Asset Management Data.

These Programme Support Elements collectively form three Components:



## Management Systems

Our Performance Evaluation service, alongside our Performance Objectives & Goal setting activities, enable us to effectively integrate the necessary components and create a transparent and accessible *Performance Plan* for your Asset Management team. We work with you to develop and implement an effective *Communications Plan* to manage the expectations of your Stakeholders. To make sure that your progress is demonstrable, with a clear audit path, we also work with you to issue a compliant *Quality Plan*.

Your Asset Management team members and stakeholders remain the key enablers to successful programme implementation; that is why we have developed the capability to identify and execute a *Change Management Plan* with you — to ensure that you are operating in an environment that embraces changes with team members who take ownership for the execution of programme components.

## Operational Effectiveness

Our management system elements complement the Maintenance Execution Plans that you develop. Our operational effectiveness elements reinforce the long-term impact of plan execution and, ultimately, govern the sustainability of your Integrity & Reliability Programme. Firstly, we work with you to determine that your Asset Management team is structured to suit the smooth operation of your integrity & reliability programme; this ensures that you have the *Organisational Effectiveness* to facilitate sustainable, continuous improvement. Then, within your appropriately structured organisation, we develop the *Training & Competency* programme that enables each of your Asset Management team players to be effective in contributing to the sustainable programme application. With your Division correctly organised and staffed with an effectively skilled team, we support you in developing an effective set of working guidelines to which they can adhere. This *Procedures Development* service ensures that you are properly resourced for consistent and complaint programme implementation. To complement this, we provide *Emergency Response Planning* to ensure that your last line of defence is in place to contain the consequence of failure in a prepared, rehearsed and compliant manner.

## Data Management

PIMS offer integrated, collaborative Data Management services that enable you to access and maintain information - liberating data to support informed choices regarding the Integrity and Reliability of your Asset. Effective data management is central to the efficient implementation of your Integrity & Reliability Programme. We develop Asset Management Databases that allow the manipulation and integration of information, supporting the tools that provide:

- Alignment of Data, using common tags & references
- Segmentation works, with elaboration contingencies for Dynamic Segmentation
- Validated templates for Criticality Assessment works
- Collaborative workflow management with tracking of progress
- Progressive, structured Susceptibility Studies and Integrity Evaluations
- Performance Evaluation dashboards and report generators



Our Integrity-led approach, supported by our Business Management experience, enables us to correctly position Data Management within your Integrity & Reliability Programme. We insert those collaborative tools that improve compliance to process and eliminate redundancy in your Corporate Systems.

We apply the disciplined approach of New Technology Introduction (NTI). Applying our Structured Approach, we establish a robust business-case to navigate the tollgates of detailed specification, design, build, test, launch and in-service validation. Throughout this structured process, we maintain the clarity of vision and purpose to ensure the completed deliverable meets your goals.

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