



INTEGRITY & INSPECTION

THE EXPERT PROVIDER OF ASSET INTEGRITY
AND INSPECTION SERVICES TO THE GLOBAL
OIL & GAS ENERGY INDUSTRIES.

ASSET INTEGRITY PARTNER

STORK

ASSET INTEGRITY PARTNER



INTEGRITY & INSPECTION SERVICES – BRIDGING THE GAP BETWEEN STRATEGY AND IMPLEMENTATION

Assess, Inspect and Repair services is a practical solution to asset integrity assurance.

Stork is the leading provider of Asset Integrity services to the global oil & gas, power and chemical industries. Our integrated Assess, Inspect and Repair (AIR) approach enables us to manage asset risk and integrity throughout the life-cycle; from original plant design right through to decommissioning.

Working together with operators, Stork's Integrity division use risk-based methodologies to develop and optimise an inspection process in alignment with the strategy of specific assets. With a fully integrated capability to carry out any necessary repairs, Stork reduces failures; increasing asset life and maintaining the hydrocarbon envelope.

We use our extensive knowledge in risk based assessment (RBA) to plan and execute a wide range of integrity activities. From topside to subsea, Stork implements best practices developed from many years of experience in both on and offshore sectors.



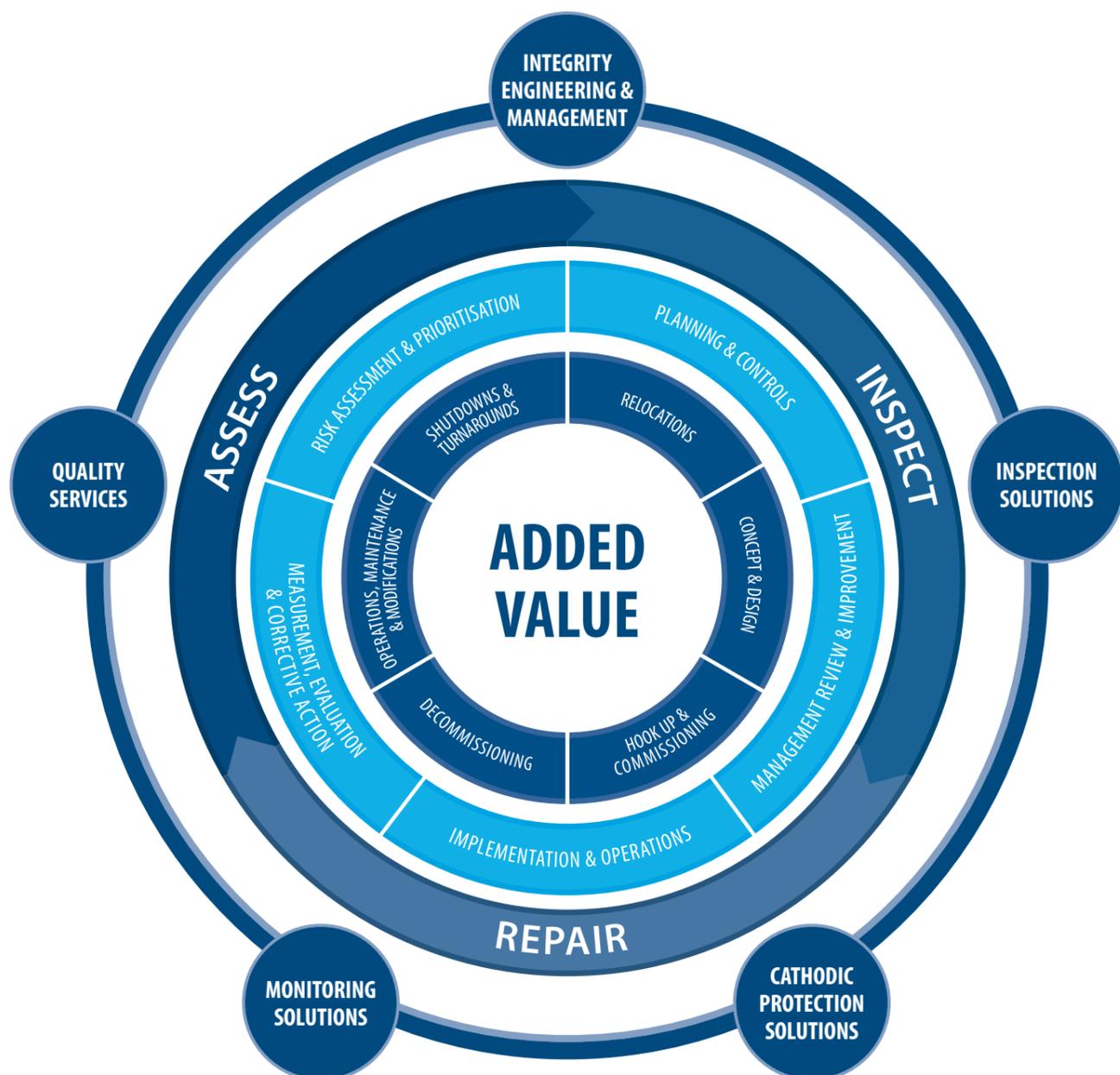
Where possible the Integrity division recommends working with Stork's complementary service portfolio to ensure risk based inspection programmes and written schemes of examination to provide an efficient and complete service package.

Stork's Integrity and Inspection service offering delivers active risk management; ensuring that the inspection programme is relevant to the remaining asset life and focused on the safety critical elements. In turn, provides operators with the assurance that their assets can operate safely and efficiently at all times.

ASSESS, INSPECT & REPAIR

INTEGRITY ENGINEERING & MANAGEMENT

STORK'S PRACTICAL SOLUTION TO ASSET INTEGRITY ASSURANCE



ENSURING SAFETY, PROTECTING THE ENVIRONMENT AND MAXIMISING ASSET INTEGRITY

Stork has been a leading provider of integrity engineering and management services, for over 20 years. We work with operators to help ensure the safety of personnel, protect the environment and maximise asset integrity. We reduce risk while prioritising resources. This in turn, reduces costs by maintaining plant integrity uptime through the reduction of unplanned shutdowns using the following engineering disciplines: process inspection, corrosion, pipeline, structure, and subsea.

HOW WE ADD VALUE:

- Comprehensive asset integrity services that reduce cost, risk and unplanned downtime
- Total integrity management service and/or specialist niche applications
- Proven knowledge, skills, experience, competency and breadth of capability

Our technical experts work closely with you to provide the best mix of engineering knowledge and industry know-how, resulting in the optimum solution. Stork offer asset integrity assurance at the peak of the asset responsibility chain whilst ensuring quality, reliability and value creation at the point of delivery.

Our track record is based on a broad knowledge base combined with technical skills and extensive experience in inspection, corrosion, erosion and materials degradation processes and mechanisms. Our systems optimise asset safety, integrity and life-cycle costs.

We can provide a total integrity management service or a specialist niche application, with all stages in-between, to meet your needs. Our comprehensive portfolio enables the integration of knowledge-based engineering with practical field-based experience and capability. The result is a unique package, combining the 'thinking and doing' aspects of technical integrity and delivering an unrivalled quality and diversity of service.

OUR PROCESS OFFERING INCLUDES:

- Integrity management of static pressure systems, structures and pipelines
- Corrosion engineering and risk assessment
- RBI & planning
- Cathodic protection services for subsea structures, ports and harbours
- Maintenance management and optimisation
- NDT and heat treatment
- Subsea integrity and inspection management
- Monitoring technology for corrosion and erosion
- Specialist inspection services (e.g. risers and caissons)
- Materials testing, analysis and failure investigation
- High pressure water jetting/cleaning
- Pipeline dewatering and debris recovery
- Pipeline pressure testing and isolation

Our accreditation as a Type A inspection body, certified by UKAS, ensures that our management systems, procedures, personnel competence controls and document management controls deliver a quality assured integrity service. Stork's Integrity Management and Engineering team provides the right support.

MONITORING SOLUTIONS

CATHODIC PROTECTION SOLUTIONS

FROM CONCEPT TO DESIGN

Stork has established a strong track record and reputation for the ability to solve challenging monitoring tasks that require innovative, safe and efficient technical solutions.

Stork's ability to conceive, design, specify, install maintain and service equipment to acquire critical information is unique. The information is used by disciplined engineers (Corrosion, Integrity, Structural and Pipeline) whilst carrying out engineering assessment, providing confidence in asset integrity and ensuring safe future operation.

Industry leading monitoring and intervention technology provides the basis for Stork's Monitoring services. Each project is tackled on the basis of providing the best technical solution and tailored to the client's specifications and requirements.

The intervention tooling packages can be off the shelf or project specific ranging from intrusive, non-intrusive, passive or online systems. Extensive experience of field operations and additional complementary services provide a unique and strong Monitoring Solutions package.

SERVICE OFFERING:

Our services combine technical knowledge, expertise and experience to provide optimum solutions; assuring the corrosion protection of assets and infrastructure.

Typical applications include:

- Wireless Dataloggers
- High temperature non-intrusive monitoring
- High accuracy intrusive probes
- Traditional corrosion monitoring
- Bespoke designs for corrosion monitoring systems
- Retrofit corrosion monitoring systems
- Corrosion & sand monitoring status and performance
- Live intervention based on double isolation and hydraulic actuation
- Data assessment, management and verification
- Sand and other particle detection
- Erosion modelling

BENEFITS & VALUE ADDED:

Operating as part of Stork's Monitoring Solutions team, our specialist engineers have the knowledge and ability to support multiple technologies. Stork follows robust competency structures; ensuring a quality deliverable first time.

Every aspect of these services has been examined in conjunction with ISO 9001:2008 and the Stork QMS System. We also provide added assurance supported by comprehensive work packs and detailed risk assessments which are bespoke to each work scope.



THE LEADING PROVIDER OF CATHODIC PROTECTION

With over 30 years' experience and knowledge, Stork is recognised as one of the leading providers of Cathodic Protection (CP), for both offshore and onshore assets.

SURVEY:

With an excess of 70,000km of subsea pipelines, and more than 1,000 offshore platforms surveyed globally, Stork has delivered industry leading reliability, ensuring survey scopes are completed effectively, collecting quality and meaningful data on the CP status of assets.

ASSET AND COMPONENT SURVEYS INCLUDE:

- Floating Production, Storage and Offloading units (FPSOs)
- Subsea Jackets and Platforms / Subsea Manifolds, Wellheads and Trees
- Pipelines, Pipeline Risers and Spools
- Offshore Windfarm Monopiles & other renewables



DESIGN & ENGINEERING:

With the aim of mitigating corrosion in the marine environment, Stork's CP Design & Engineering team can offer 'turnkey' or 'built to order' services for sacrificial or impressed current systems, based upon up-to-date knowledge and extensive experience.

OUR SERVICE OFFERING INCLUDES:

- Initial surveys / analysis of existing CP data
- Design & CP Modelling and Management of CP Databases
- Supply & Installation / Commissioning & Maintenance
- Project Management and Definition of Workscope

IMPRESSED CURRENT CATHODIC PROTECTION SYSTEMS:

Bespoke design and manufactured ICCP systems have been supplied for a range of applications including: offshore fixed structures, semi-submersibles, FPSOs, surface and submarine naval fleets and merchant marine shipping. Our advanced techniques and methodologies allow extremely accurate control of the CP system, reducing operating costs and protecting your investment.

Techniques and methodologies include:

- Design of the full system for the protection of the total hull and its appendages
- Anti-fouling for tanks, caissons and other applications of sea water services
- Propeller shaft earthing and monitoring systems

Our engineers possess the specialist knowledge, experience and training to provide customer support services worldwide including: installation of ICCP systems equipment, repairs and audits.

MONITORING:

Stork's Seetooth CP innovation can be fitted to subsea installations to continuously monitor the performance of a Cathodic Protection system. Contactless data retrieval by ROV means that permanent connection to the surface is not required. The system provides accurate trending information on CP system performance, including strategic information on anode consumption.

INSPECTION SOLUTIONS

PROVIDING UNIQUE INSPECTION PROGRAMMES

Managed inspection programmes throughout the asset lifecycle are one of the critical operations to ensure optimal operational capacity.

When planning and executing inspections with minimum disruption to operations, Stork's combined Inspection Solutions team offers our clients experienced multi-disciplined technicians, providing maximum flexibility and high quality operational delivery.

Fully qualified, our Inspection Solutions team allows our clients to ensure that their Health and Safety statutory requirements are met. Asset integrity is assured through a quality and reliable inspection regime is also assured.

SPECIALIST INSPECTION SERVICES - CAISSON AND RISER INSPECTIONS:

Caisson integrity has become one of the key areas of focus over the last several years. Stork is a market leader in the provision of remote inspection services.

With over 15 years' experience specific to caissons and risers, we pride ourselves in listening to our clients, enabling us to provide a complete tailored inspection solution.

Stork has gained a reputation for providing clients with bespoke solutions for challenging inspection problems. This is obtained through our well developed and robust inspection procedures; delivering effective and efficient data, minimising project downtime.

Stork's Inspection Solutions can be used as part of our client's Integrity Management Program, either as a one-off workscope or an on-going Inspection Maintenance Program.

SERVICES OFFERED INCLUDE:

- Remote Visual Inspection (RVI)
- Ultrasonic Wall Thickness Mapping
- 3D Laser Profiling
- High Pressure Water/Jet Cleaning
- Ovality checks and Project Management of caisson repairs/replacement, utilising internal inspection techniques



CAMERA INSPECTIONS:

Stork delivers an extensive portfolio of camera systems that offer market-leading capabilities for applications ranging from RVI of platform legs to prover loops and vessel inspection. We understand that each application is different with unique specifications; our aim is to create an individual inspection solution to meet your requirements. Customisable solutions include advanced crawler systems, and camera centralisers that provide inspection capabilities in pipework up to 50" internal diameter.

CAMERA INSPECTION SERVICES -

- Ventilation, Vessels & Tanks
- EX Rated Camera System
- Crawler Camera Systems
- Prover loops/Fiscal metering

INSPECTION SERVICES - NON-DESTRUCTIVE TESTING:

Stork has a proven track record of more than 15 years in the field of non-destructive testing (NDT).

We provide a complete integrated service, including state-of-the-art equipment and highly trained technicians and plant inspectors.

Supported by our extensive on-shore integrity expertise, our integrated services offering can be delivered through ad-hoc inspection work scopes through to complete topside Integrity inspection campaigns.

Key to our success is being able to work to tight deadlines efficiently, delivering a quality service that puts safety first.

All of Stork's Inspection Solutions personnel are rope access technician (RAT) qualified, offering maximum flexibility to carry out offshore inspections cost effectively and with minimum disruption to client's on-going operations.

As part of our multi-disciplined approach, Stork also provides clients with personnel to carry out Lifting Operations and Lifting Equipment Regulations (LOLER) inspections, in accordance with current legislation, and provide a state-of-the-art reporting system. This allows our clients access to the reports and data 24 hours a day.

OUR SERVICES INCLUDE:

- Visual inspection and metrology
- Magnetic particle inspection
- Dye penetrant inspection
- Ultrasonic testing
- Eddy current inspection
- Radiography (X-ray and Gamma)
- Positive material identification (PMI) testing and holiday testing
- Advanced inspection

Stork offers additional operational techniques and leading technology to enhance our extensive conventional NDT service.

Through our advanced inspection capability, we deliver a next-level technical solution for accurate and repeatable detection of manufacturing and in-service defects.



QUALITY SERVICES

AN ESSENTIAL PART OF YOUR SUPPLY CHAIN STRATEGY

Stork is a highly experienced international provider of inspection, expediting and quality assurance services primarily to the Oil & Gas and Nuclear industries. Operating within the Integrity division of Stork, the Quality Services department has earned a strong, creditable reputation for delivering reliable, cost effective services on a global basis in accordance with internationally recognised standards.

We inspect equipment and plant before it leaves a supplier to ensure that it meets your specific requirements. This ensures a quality product and reduces the risk of production outages, as well as subsequent threats to safety, asset integrity and legislative compliance.

Stork has developed a Quality Assurance System and procedures to regulate both our national and international quality inspection operators, which is independently accredited to BS EN ISO 9001 by Lloyds.

OUR CORE QUALITY SERVICES OFFERING INCLUDES:

- Integrated project management
- Third-party vendor inspection (all disciplines)
- Expediting
- Vendor auditing
- Welding engineering
- Full-time site inspection (all disciplines)
- Lay-barge inspection
- Pipemill inspection

With more than 250 locally-based inspectors in the UK, continental Europe, Americas, Africa and Asia-Pacific regions, we operate across all inspection disciplines including pipemills, mechanical, electrical, coatings and structural. Stork has undertaken inspection and expediting services in most major pipe mills throughout the world and is familiar with the plant layouts, operations and locations.

HOW WE ADD VALUE:

- A proven track record and experience in the provision of an extensive range of third party inspection and expediting services
- Access to a global network of inspectors and expeditors, with extensive technical knowledge and experience
- A single point of contact via a dedicated Project Coordinator offering worldwide coverage, resulting in easier communication and streamlined project management
- Access to a centralised database of inspectors/expeditors with up to date details of competences and certifications held on Stork's in-house system, as part of an overall quality assurance programme
- Accredited Health, Safety, Environment and Quality (HSEQ) management system, certified to ISO 14001 and OHSAS 18001 standards, including our award winning REACH programme. (REACH is Stork's global platform for delivering continuous improvement in safety performance and in communicating our safety culture to all stakeholders.)
- Professional documentation provided by an extensive team of specialists, providing access to key administrative support functions and corporate assistance
- Application of modern IT systems with full client extranet capabilities



SAFETY IS OUR No.1 PRIORITY

Stork is fully committed to being recognised as a world leader in safety and to help us achieve this goal, we have REACH. Stork's award-winning, global initiative on which we build and communicate our safety culture. REACH helps us to measure our safety performance, so that we can continue to improve upon it – at all levels.

By placing safety unequivocally as our No.1 priority, REACH helps us to deliver complex projects to the highest safety standards without compromising quality. It provides us with the practical tools and support we need to ensure we get every single employee home safely at the end of each and every shift.

REACH enables us to improve safety performance through:

- ▶ INDIVIDUAL RESPONSIBILITY
- ▶ VISIBLE LEADERSHIP
- ▶ WORKFORCE ENGAGEMENT
- ▶ PERSONAL AWARENESS
- ▶ EFFECTIVE INTERVENTION
- ▶ TWO WAY COMMUNICATION

REACH provides a mechanism for benchmarking our performance in a meaningful way, on the basis that: if you can't measure performance you can't improve it. Tracking our global and regional safety performance, whilst measuring against industry standards, allows us to identify where we need to improve and engage with our employee community.

A 'breakthrough' initiative, REACH drives value for our clients by:

- 1 Improving safety performance on their assets
- 2 Engaging with and challenging their safety culture
- 3 Transparent HSEQ reporting, sharing information, learnings & alerts
- 4 Leading topical debate, discussion and knowledge-sharing

We share our REACH resources, which include safety videos, campaigns, alerts and lessons learned, so that we can work with our colleagues, peers and wider industry to improve safety together.



For more information visit the REACH website:
www.stork.com/reachsafety

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