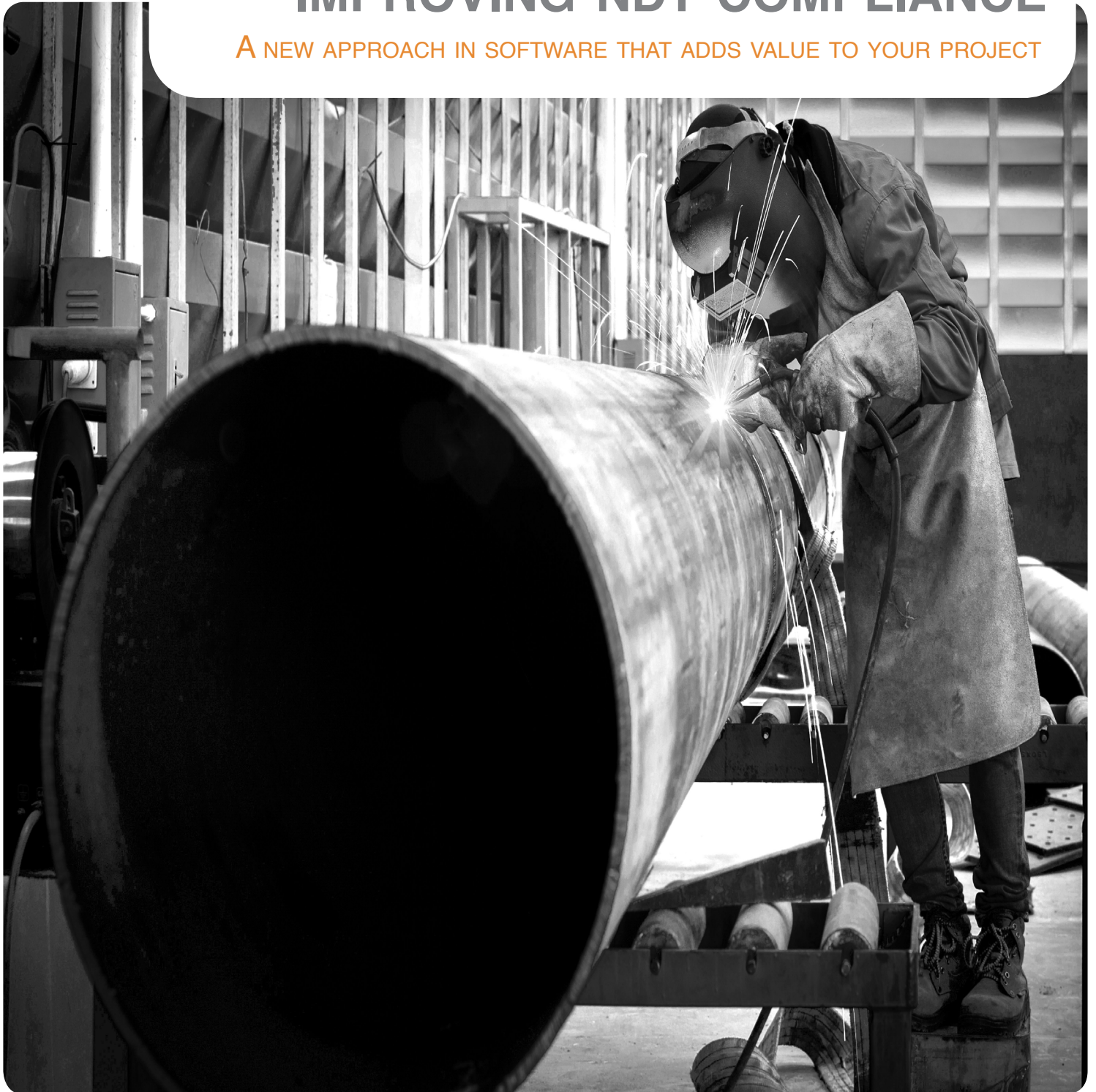




IMPROVING NDT COMPLIANCE

A NEW APPROACH IN SOFTWARE THAT ADDS VALUE TO YOUR PROJECT



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INTRODUCTION

Non-destructive pipework testing (NDT/NDE) is an integral part of all projects that will have a 'process' output; particularly on oil & gas and pharmaceutical projects. NDT plays a crucial role in quality assurance (QA) and quality control (QC). It allows piping to be examined and evaluated without the pipework being damaged in the process.

For QA/QC personnel the management of NDT has traditionally been a manual process involving the use of tools such as Excel spreadsheets, request books and email. This process is onerous and resource-draining, resulting in costly delays and rework for contractors.

However, software designed for the construction industry streamlines NDT management by:



Ensuring contractors are compliant with client specifications by providing real-time NDT statistics.



Reducing errors and rework by providing a smart, centralised platform.



Speeding up data entry and document management allowing employee time to be redistributed.



Providing a comprehensive audit trail ensuring full traceability.



STANDARD INDUSTRY PROCEDURES

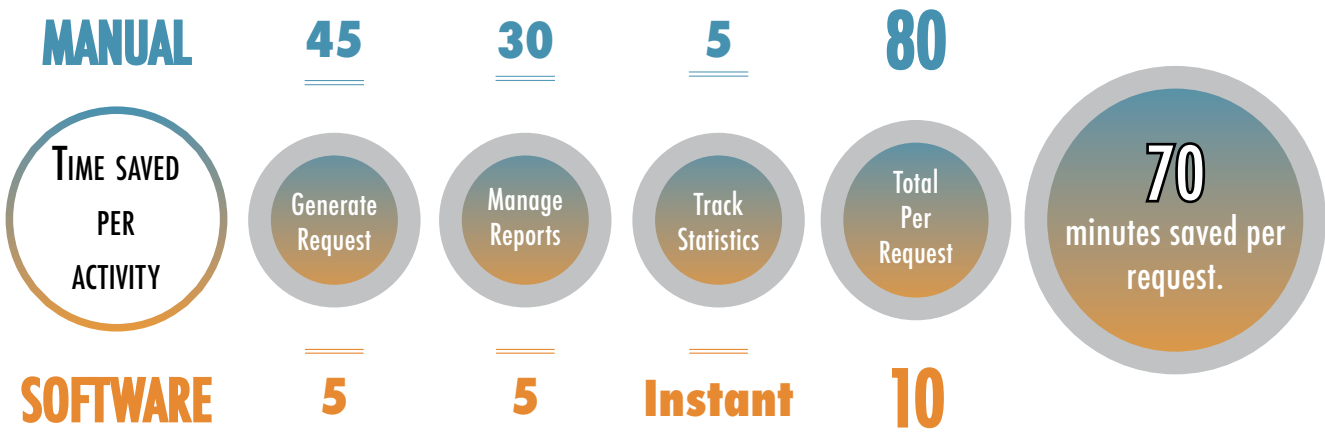
Managing NDT is time consuming, involving unnecessary hours spent on manual entry and cross-referencing between multiple documents and platforms. This costs contractors time and money, and working with inefficient tools is frustrating for employees.

Problems can arise if employees are working from outdated information so care must be taken to ensure only live, untested welds are selected.

NDT administration is managed in much the same way as other aspects of the construction process. Information is logged and maintained using multiple Excel spreadsheets or Word documents and is stored in a shared folder.

NDT administration typically involves the following stages:

- 1. The NDT request form is filled out by hand listing the welds to be tested. The request and corresponding drawings are emailed to the NDT contractor.
- 2. When testing is complete, the report indicating accepted and rejected welds is communicated and the results are recorded against the weld log database.
- 3. Statistics are updated and compared to the project piping specifications to ensure NDT compliance.



CHALLENGES

Construction companies are under pressure to deliver higher quality projects in shorter periods of time.

NDT management is time consuming and tedious for project engineers, weld inspectors and QA/QC personnel.

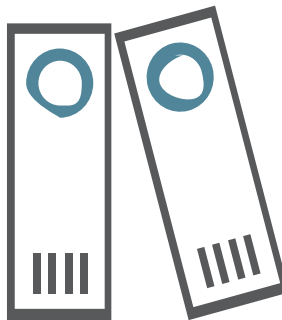
The tools available for NDT administration weren't built with the construction industry in mind and are often limited and inefficient in managing large volumes of documentation, fast-paced work environments and multiple users.

NDT often exceeds its allocated budget due to costly rework caused by the limitations of existing tools.

The limitations of inefficient tools can cause challenges during the following processes:



Generating NDT request



Managing the reports



Tracking the statistics

45
Minutes

#1 GENERATING NDT REQUESTS

At the moment most companies fill out NDT requests by hand and rely on different documents such as Excel spreadsheets, project piping specifications and email to decide what tests need to be carried out.

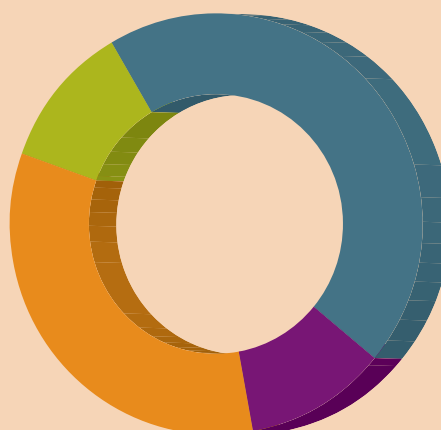
In order to generate a single request using a manual process employees must sift through weld log databases, compare project parameters and NDT reports, handwrite a request form and compile the necessary isometrics. The limitations of current tools in generating NDT requests is costly for contractors.

For example generating a single NDT request with 20 welds can take 45 minutes to complete, with up to 20 of these minutes being spent handwriting the request sheet. Moving between different documents and platforms, along with writing the information out by hand leaves the process more prone to mistakes and can result in incorrect welds being tested or welds being missed. Even after the requests are filled out, time is often needed to clarify, edit or redo the form.

The current process for managing NDT requests can be a huge source of frustration for contractors and their employees who are under pressure to meet deadlines.

A request of 20 welds takes approximately 45 minutes to generate.

- 15 ● Searching for welds
- 20 ● Handwriting Request
- 5 ● Double-checking Request
- 5 ● Scanning & Emailing





#2 MANAGING THE REPORTS

"I had to manually search the weld log for each individual weld and add the results in one by one".

*Jason Radley,
Head of Project
Controls,
Radley Engineering*

Contractors depend upon the management of NDT results to ensure compliance and determine outstanding NDT.

After NDT has been carried out the QA team receive a report that lists the results of the welds tested. These results are logged against the weld log database. The report itself is scanned and stored in a folder and the hard-copy is filed.

Manually logging and managing these reports is a painful process as:

- matching the reports to the weld log database is time consuming.
- switching between multiple applications leaves more room for human error.
- reports can be lost or difficult to locate.
- it can result in non-compliance to project specifications.

These challenges can affect business relationships and the company's reputation by resulting in delays and reworks.



Challenges

The statistics are calculated by using a combination of Excel formulae to compare the project parameters to NDT results that have been recorded in the weld log. As the weld log is updated with new NDT results the statistics are updated automatically. The amount of welds to be tested are calculated manually from these statistics.

[illegible]

These large and complex spreadsheets cause challenges for users. They are challenging to set up, and then are slow to open and difficult to navigate due to the large volumes of information contained over multiple spreadsheets.

Care must be taken not to disrupt the Excel formulae when editing. Small changes can disrupt the calculations, causing inaccuracies and delays.

SOFTWARE SOLUTION: EIDA

EIDA Solutions’ intelligent construction software simplifies and streamlines NDT management, reducing the time spent on its administration and increasing accuracy and efficiency.

NDT parameters are defined and set in EIDA at the beginning of a project and integrated with weld history providing real-time project statistics. NDT requests and reports can easily be managed and accessed by a keyword search or filtered by date, type of NDT, piping specifications or fluid-type.

EIDA’s 3 step process has **reduced the time our clients spend on NDT administration by up to 88%**, offering the following benefits:

Main Contractor	Ensures contractors are compliant. Protects relationship with client in assuring their standards have been met. Full traceability throughout.
Contractor	Employees working to a standardised process. Information furnished to NDT contractor automatically. Archived NDT reports available for auditing and handover.
Users	Less time spent managing requests & reports. Rework eliminated. No need to update or amend Excel.

Solution



#1: GENERATING THE REQUESTS

With EIDA, requests are quickly and accurately created directly from the weld log in 3 simple steps:

- 1

The NDT type to be carried out is selected. EIDA uses rules-based logic to ensure **only welds that require this particular type of NDT** are available for selection.
- 2

Welds can be filtered by welder, piping specification, fluid-type, date welded and more. **Only live and untested welds** can be selected.
- 3

Relevant personnel, including the NDT inspector are selected from a list, and the request along with the necessary isometrics are **instantly compiled and automatically emailed**.

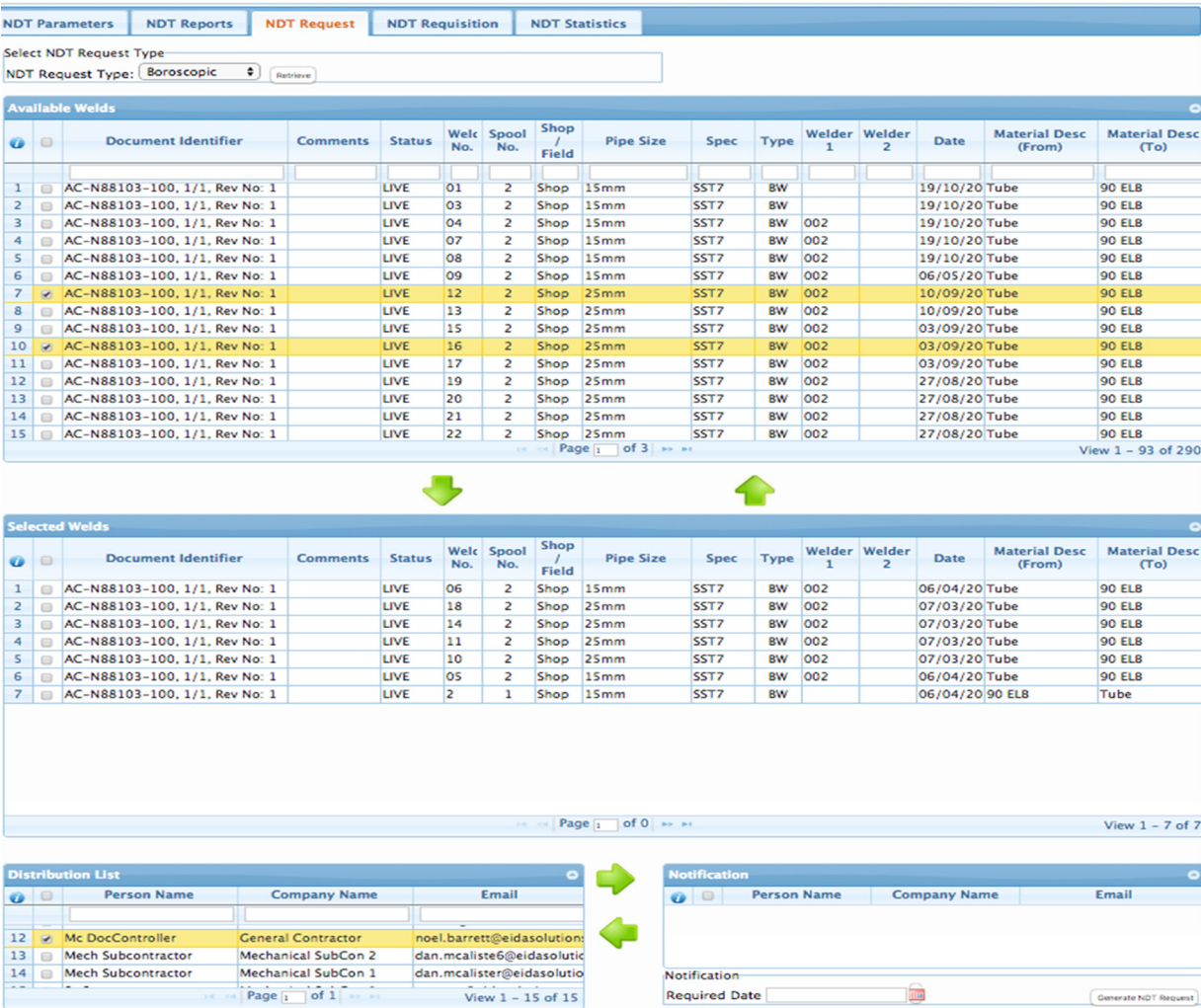


Figure 3: EIDA's Request Management Interface

Solution



#2 LOGGING THE REPORTS

The ability to store NDT documentation on one platform reduces the amount of time spent searching for information and ensures full traceability.

EIDA provides a centralised platform for the management of NDT information. This is particularly useful for managing the NDT reports.

With EIDA, users can view generated NDT requests and can easily apply the results from the NDT report to each weld. This takes just a few seconds.

A PDF of the NDT report can be seamlessly uploaded to all relevant welds.

EIDA also provides users with the option to attach a file to each weld listed in an NDT request. Contractors can use this feature to upload relevant documentation such as borescopic video files.

Solution

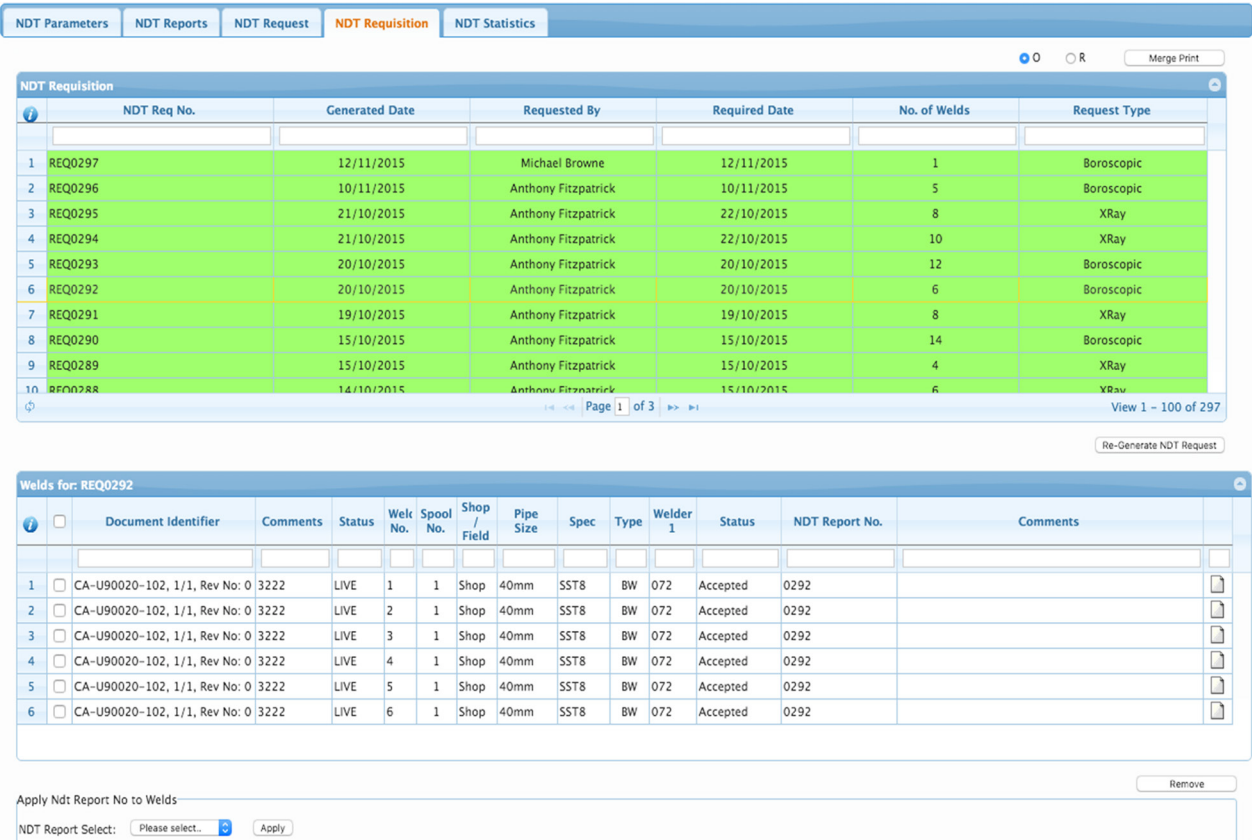
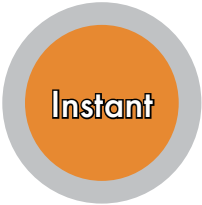


Figure 4: EIDA's Report Management Interface



#3 TRACKING NDT STATISTICS

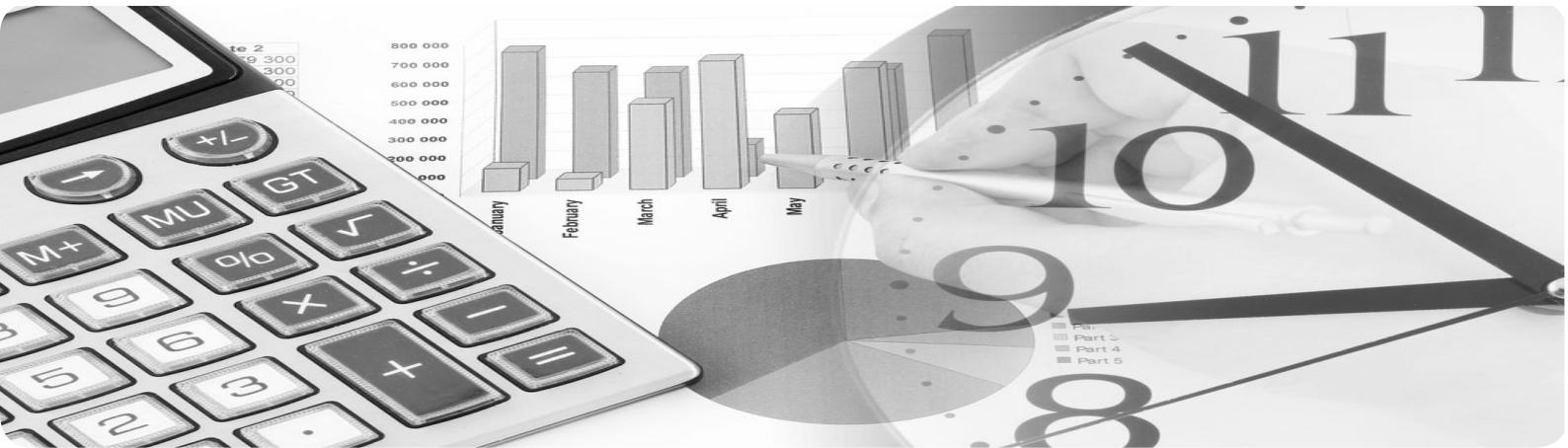
By clicking on the ‘NDT Statistics’ tab users instantly have access to real-time calculations indicating project compliance.

In-built logic connects the weld log, requests and reports to the project parameters to instantly calculate statistics and determine if the project is complying to the NDT requirements. Piping specifications that have met their targets are highlighted in green, while those that are below target are highlighted in red with the quantity of welds required to be tested indicated in brackets.

NDT Report By Specification																			
ID	Pipe Spec.	Total Welds	X-Ray				Boroscopic					MPI				DPI			
			Examined	Examine Rate (%)	Accepte	Accepte Rate (%)	Examined	Examine Rate (%)	Accepte	Accepte Rate (%)	Rejecter	Examined	Examine Rate (%)	Accepte	Accepte Rate (%)	Examined	Examine Rate (%)	Accepte	Accepte Rate (%)
1	CPL1	907	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	CRB1	11629	581	5.51	577	99.31	0	0	0	0	0	79	7.28	79	100	0	0	0	0
3	CRB2	3295	133	5.14	131	98.5	0	0	0	0	0	39	5.5	39	100	0	0	0	0
4	CRB3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	SSP5	2466	121	5.03	121	100	0	0	0	0	0	0	0	0	0	0	0	0	0
6	SST1	4	0	0	0	0	4	100	4	100	0	0	0	0	0	0	0	0	0
7	SST4	61	0	0	0	0	61	100	61	100	0	0	0	0	0	0	0	0	0
8	SST7	406	27	6.65	27	100	362 (44)	89.16	362	100	0	0	0	0	0	0	0	0	0
9	SST8	6595	278 (52)	4.22	278	100	1205 (114)	18.27	1197	99.34	8	0	0	0	0	0	0	0	0

Figure 5: EIDA's Compliance Tracking Interface

With this information readily available to the project team, corrective and preventive actions can quickly be taken to ensure that NDT remains on schedule, within budget and fully compliant.



Solution

CONCLUSION

EIDA Solutions provides contractors with a powerful, smart and centralised platform for the management and administration of Non-Destructive Testing.

On large process projects NDT can demand the generation and management of hundreds of requests and reports a week.

Commonly used tools lack the ability to efficiently manage this process. This presents the following problems for contractors:

- Inefficient, and sometimes incorrect input of information.
- Documentation is lost or difficult to locate.
- Man-hours lost on inefficient administration process.
- Project over-budget due to delays and reworks.
- Damaged reputation and relationship with client.

EIDA Solutions' NDT management system addresses these problems by:

- Fully integrating NDT with the weld history records to ensure that only live, targeted welds are made available for selection based on the NDT project parameters.
- Accelerating NDT data entry by archiving NDT reports and their results against NDT requests and automatically applying them to the weld log.
- Providing real-time NDT statistics instantly.
- Ensuring compliance is achieved and documentation is readily available for auditing and handover.

"EIDA is a life saver on our project"

Anke Bessing, QA Manager, M+W Group

"Thanks for the support last week.

That was a real demonstration in how it should be done.

Mobilisation /demo/implementation. Great job.

When you implement change this is what you need.

Well done."

Tony Hennessey, Project Manager, Mercury Engineering

ABOUT EIDA SOLUTIONS

Established in 2010, EIDA Solutions brings together a wealth of experience in the construction and technology industries. We have leveraged this domain expertise to develop a ground breaking solution to assist engineering companies in this digital age.

The construction sector has been slow to embrace IT solutions to aid engineers and management in the delivery of projects. We believe that this is due to traditional software applications being focused on IT capabilities rather than delivering systems which meet the needs of construction engineering professionals. At EIDA Solutions we are committed to providing a client-driven product and service, and offer software tailored to project specific requirements.

By embracing the concept of software as a service (SaaS) we enable our clients to reduce project operating costs, enhance quality and optimise site performance with customised software, thus differentiating the services that we provide from those offered by our competitors.

EIDA Solutions continues to provide software services to a number of high-profile clients, on a variety of high-specification, high-value projects, both nationally and internationally.



CONTACT Us

Corporate Head Office:

IRELAND

Suite One, The Avenue
Beacon Court, Bracken Road
Sandyford
Co. Dublin
+353 (01) 539 4500

Mainland European Office:

BELGIUM

Science 14 Atrium,
14b, Rue de la Science
1040
Bruxelles
+32 (0)2 880 3758

