User Report

A fresh breeze in non-destructive testing:

CCK Ingenieurbüro Jaderberg digitalises testing processes

Scarcely any industry has been so restrained in matters of digitalisation than non-destructive testing – NDT. This digital abstinence has been with good reason, mainly the high demands on process and result certainty. The introduction of DIN EN ISO 17636-2 and new IT solutions have now cleared the way for modern, efficient and digital NDT. CCK Ingenieurbüro GmbH in Jaderberg is one of the first testing firms in Germany to take this route.

"Non-destructive testing is first of all concerned with security, reliability, and precision. But our customers also expect a high degree of flexibility, speed and professionalism with regard to documentation. By changing to digital processes we can meet these requirements – with excellent quality. That's a clear competitive advantage from our point of view," thus Nicolas Czichos, founder and managing director of CCK Ingenieurbüro GmbH, explains the decision to make this major change.

Laboratory vehicle, with digital radioscopy, from outside ...

Learning from healthcare

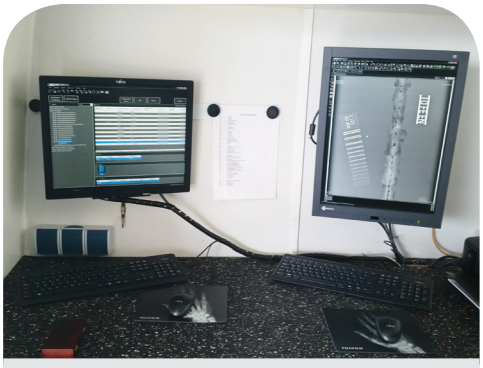
DIN EN ISO 17636-2, which governs the requirements for digital radiography as a substitute for film-based test methods, provided a major impetus for the acceptance of digital testing methods. Since the standard supplies the necessary reference values for digital NDT, the firms whose materials are tested can be sure that reproducible and tested methods are being used.

However, the elaboration of quality criteria for only one of many test methods is not enough. Reliable, digital process control requires much more: appropriate software capable of managing the highly sensitive data from various sources and archiving them securely. Here the industry profits from the experience in the world of healthcare which has been profoundly changed by digitalisation over the past 20 years: "The similarities of the processes

... from the inside, with imaging plate system (CR System)

used in non-destructive testing and medical diagnostics are huge: In both fields the demands on the quality of images, on data protection and documentation are enormous. In some respects even the same methods are used, x-ray, ultrasound and endoscopy. In healthcare the management and archiving of data has been dramatically optimised in the past years and the solutions applied are superbly suited for use in non-destructive testing", says Benedikt Kürwers, CEO of PTH Prüftechnischer Handel GmbH, a firm supplying equipment for materials testing and a partner to the Jaderberg consulting engineers.

As a supplier of conventional photographic film, Mr Kürwers understood quickly what the market needs – digital solutions – and reacted accordingly. For him, digital solutions go beyond the technical equipment for generating images but cover the appropriate IT. In order to be able to offer his customers a complete one-stop shopping digitalisation package, he entered a partnership with Bochum-based VISUS NDT that offers innovative and professional software for image and test report management: JiveX. "We have gained our knowhow through decades working in healthcare; VISUS is among the market leaders for Picture Archiving and Communication Systems – PACS for short – for radiology in Germany. One challenge in this field over the past years has been to integrate the medical data outside of radiology into the PACS. Whereas there is the globally recognised DICOM standard for radiology, the other medical disciplines have operated with proprietary instead of standardised solutions. In order to migrate these data into a uniform system VISUS developed solutions for conversion into standard formats. We have adapted this experience for non-destructive testing," explains Peter Rosiepen, responsible for the VISUS NDT division.



RT imaging and analysis workstation

Peter Rosiepen
General Manager

DICONDE: the standard for NDT

Currently the so-called DICONDE standard for non-destructive testing is becoming established, comparable to the DICOM standard for medicine. The advantage of such a standard is that data in this format can be managed, archived and exchanged regardless of the manufacturer; like standards such as .pdf or .jpeg that permit opening, viewing, processing and archiving documents or photographs regardless of the device that generated the data. In the

USA, DICONDE is already well established as the standard and it is also well on its way to acceptance in Germany. “This development is irreversible, as we have also seen in healthcare. Manufacturers attempting to avoid standardisation in the hopes of binding their customers will not survive long in the market,” says Peter Rosiepen.

Fast, paperless and unambiguous

Nicolas Czichos is well aware of the fact that the transition from analogue processes to digital structures cannot happen overnight: “We started with equipping a mobile testing laboratory with a digital x-ray detector. The customer reaction was outstanding, not least of all because radiation exposure can be substantially reduced. In a next step we will change the complete IT infrastructure in our Jaderberg offices so that not only x-ray images but also all our other data – test reports, images of ultrasound curves, etc. – will be available digitally. To do this they will all be scanned centrally and entered into JiveX.”

Such a transition is a massive feat but brings unmistakeable advantages. On the one hand all data necessary for a test report will be unambiguously identified and compiled in the system with an order number. Retrieval is then at the push of a button – no more long archive searches. In future CCK customers will be able to retrieve test data without delay via a secure server access. Waiting for the inspector with the hard copy test results will then be a thing of the past, accelerating the entire testing process enormously and optimising the subsequent processes on the customer side.

On the other hand, the customer who orders a materials test can directly compare the digital data with prior images and exactly evaluate the changes in the material. Last but not the least, digitalisation saves material and space costs since the test images no longer have to be stored in analogue form for ten years or more. Instead they are archived by both the customer and CCK in the recognised DICONDE data format.

Certification, qualification, accreditation guarantee quality

To assure the necessary NDT expertise also within the digital work process CCCK inspectors are trained, certified and accredited according to DIN EN ISO 17636-2. Comprehensive training in the digital x-ray device and software is the prerequisite for continuing to provide the top quality for which CCK is so appreciated in the market. “For us, the transition from analogue to digital NDT is an investment in the future. One that initially involves more work for our inspectors, but means an enormous service improvement for our customers,” concludes Nicolas Czichos.

Inspector on an offshore platform

About CCK Ingenieurbüro GmbH

CCK Ingenieurbüro GmbH has been in existence since 1999 and since then has stood for excellent quality in NDT. The owner-operated firm, long managed by Nicolas Czichos together with his father, has always placed great value on technological development and the corresponding qualification of its staff through training, certification and accreditation. In the course of time, the firm has grown and today some 40 employees make up the CCK team. One focus of its testing business is offshore platforms, a special field that not only requires technical qualifications but also the proven climbing ability of its inspectors. The broader service spectrum includes NDT as well as quality assurance comprising data security, personnel services, and on-site management and development and implementation of outsourcing concepts. Among the firm’s long-term customers are power plant operators, shipyards or automotive suppliers.

Nicolas Czichos
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