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Simulation Software CIVA 11

Keeping up the progress started with CIVA 10 and building upon your feedback, CIVA 11 brings major advances that provide many new simulation possibilities to the users. This version also includes architecture & model improvements, leading to both higher performances & more precise computations. Finally, many efforts have been done to make the software much more user-friendly.

Don't miss this new version, which makes CIVA 11 even more of the ultimate tool for NDT simulation.

New capabilities: CIVA 10 introduced 3D CAD complex homogeneous component geometries in CIVA. With CIVA 11, 3D CAD heterogeneous specimens are now available in CIVA UT and

CIVA RT-CT, thus greatly expanding the potential applications of CIVA: Assembled structures, welds in complex components, clad 3D geometries, accounting for change of acoustic properties due to heat-treatments, simulation with multiple objects allowing considering some backscattering phenomena in RT, etc. The limits are just your ideas!

In ET, a new axisymmetrical tool replaces the former Multiple Winding module and increases the capabilities as it allows simulating some defect response configurations in tube transition zones with its tube sheet (heat exchangers), or tubes with an

irregular profile defined by a 2D CAD sketch. Regarding tubes, the electromagnetic field can now also be calculated and displayed in cylindrical geometries in the CIVA ET Field Computation module. Complex shape coils, automated flaw meshing... are just a few of the new features of CIVA ET.

In RT-CT, image plate detectors are now available bringing CIVA significantly into the world of Digital Radiography! Numerous new probes & sensors are also proposed to the UT & ET users: EMAT probes can now be simulated based on a coupling between CIVA UT & CIVA ET (non ferromagnetic materials). In UT, advanced custom UT phased-array probes joins the CIVA library, & come together with a new intuitive tool for phased array sequences definition. In ET, a sets of new shapes of coils are now available (D-coil, spiral, meander, racetrack, etc.).

Introduced with CIVA 10 for ET & UT, it is now possible to compute POD simulations in the RT module in which some automatic detectability criteria have been implemented. The new ability to assess flaw detectability makes the simulation of RT even more useful.

Aiming at getting closer to acquisition systems, one major feature is the ability to define one or several gates in CIVA UT as you would do in a real system. CIVA is now compatible with acquisition files from OMNISCAN® data files (needs to contact Olympus to update your Olympus dongle), thus benefiting from CIVA's cutting edge viewing and post-processing on your Omniscan® data! These are really important steps, which prepare the fields for future CIVA evolutions. In the same way, in the CT module, you can now import CT acquisition files, meaning that you can simulate and try various 3D reconstructions on real data!



INTROS-AUTO Automated Wire Rope Tester

INTROS-AUTO designed for non-destructive inspection of wire ropes with automatic data interpretation. Automatic interpretation is based on "traffic-light" conception. Green light allows continuing rope operation, yellow light means defects reached 70% discard criteria and red light alerts that rope may no longer be used.

The instrument consists of magnetic head & control & display unit



connected cable up to 80 meter length. Magnetic head has strong permanent magnets & measuring systems is equipped with Hall effect sensors & coils. INTROS - AUTO can be used for rope monitoring & implemented into hoisting controlling system.

Eddy Current Flaw Detector – WeldCheck/ AeroCheck

The **WeldCheck** & **AeroCheck** from **ETher NDE, UK** are single frequency Eddy Current Flaw Detector where **WeldCheck** is used in Offshore Industry mainly for weld inspection and other non destructive testing (NDT) applications. The **AeroCheck** has been targeted for the exacting needs of the aerospace industry. Common areas on an airplane that can be inspected with the **AeroCheck** include wheel brakes, wheels and landing gear, fasteners and fastener holes, engine mounts, fuselage, wing surface and hinges, bulkheads, tail plane, door access points, window frames, engine blades and engine discs.

Fully capable of all the common eddy current inspection applications you may encounter on an aircraft including paint thickness, sub-surface and surface crack detection, the **AeroCheck** is the ideal eddy current instrument for the job.

Common Features:

The **WeldCheck / AeroCheck** Eddy Current Flaw Detector uses industry standard 12-Way Lemo and Co-axial Lemo 00 connectors, offering rotary drive capabilities as standard and also absolute, bridge and reflection probe modes without the need for adapters. Lightweight at 1.2kg (2.6 lbs.) and housed in a rugged metal casing,



the **WeldCheck/AeroCheck** offers up to ten hours battery life, easy to navigate menu systems and great EC performance.

The **WeldCheck / AeroCheck** features a simple "single-level" menu system. In addition, any menu item can be added to the "Quick Menu" sidebar with its own easily recognisable icon enabling faster adjustments during the inspection process.



The **WeldCheck / AeroCheck** has been built with operator-selectable "soft keys". Every menu item has its own easily recognizable icon. There are four soft key positions for operator selectable icons for frequently used functions & a fifth position for the last menu function used. Each saved instrument setting can be associated with a unique, one press set of quick access

functions. There are also two front panel hard keys that can also be easily programmed for rapid one press access to instrument functions.

The **WeldCheck / AeroCheck** features a large, crisp daylight-readable 5.7" LCD Colour Full VGA (640 x 480 pixels) Screen ensuring the Operator has excellent signal resolution & presentation no matter what the working conditions are and with the built-in "flip" function works equally well for left or right-handed users.

Sharck - New ECA Probe for CS Weld Crack Detection and Depth Sizing from Eddyfi, Canada

The innovative design of **Sharck** probes is capable of addressing the inspection needs of several industries that rely heavily on carbon steel welds, such as the oil and gas (onshore and offshore), wind power, and structural industries.

The **Sharck** probe is a new type of ECA probe. It is based on tangential ECA (TECA™) technology, which was specifically developed for cracking in carbon steel.

This probe is not only capable of measuring crack position and length, but also of sizing cracks as deep as 10 mm (0.4 in). All this without surface preparation & paint removal.

Benefits:

Advanced Array Technology

- Based on tangential eddy current array



- Fast - Maximum scan speed of 200 mm/s
- Single-pass detection of longitudinal and transverse cracks
- Wide coverage - Simultaneously scan weld cap, toe area, & heat-affected zone
- High-performance multiplexing for optimal sensitivity
- Reliable, less operator dependent compared to alternatives

Advanced Software

- Easy interpretation with intuitive encoded 2D/3D C-scans
- Actual crack depth measurements - Not based on theoretical modelling
- Automatic readings - Crack length and depth, liftoff
- Auto-compensation - Live monitoring of liftoff & permeability variations
- Full data recording and archiving capabilities

In Line With Recognized Eddy Current Certifications

Sharck probes return signals similar to conventional eddy current testing signals, making the technology easy to learn.

NDT PRO Industrial Film Digitizer

NDTS is pleased to announce its co-operation with M/s. PACSESS NDT, Germany for Industrial Film Digitizer. PACSESS NDT provides inexpensive solutions to X-ray film storage and handling problems. Additionally, they have developed specialized post-treatment tools intended to significantly increase productivity in processing and interpreting industrial radiographs.



The NDT PRO Industrial Film Digitizer is the first non-medical film digitizer produced by VIDAR. It provides a low-cost alternative to expensive laser scanners currently used throughout the industry. With VIDAR's next-generation proprietary High Definition CCD (HD-CCD) technology, and its unique ADC (Automatic Digitizer Calibration) feature, there is virtually no variation in image quality and ensures excellent gray scale reproduction in every image. Unlike other digitizers that require at least biannual calibration and/or cleaning, VIDAR digitizers need no maintenance or calibration.

NDT PRO features:

- HD-CCD solid-state technology
- Removable/field replaceable LED long-life light source
- Digitizes up to 25 mixed-sized films in batch mode, allowing more productivity & greater efficiency
- Extended Software driver "AcuScreen NDT Gateway"
- 0.5 to 4.5 OD, based on ISO 14096 Class DS & ASME Section V
- 11 line pairs per mm with geometric accuracy better than 1% or two pixels, whichever is greater, in both axes
- Handles film from 2.36" to 14" wide by 8" to 51" long

Multi-Strip Film Feeder

- Scans up to five filmstrips simultaneously per pass.
- Multiplies a project's productivity up to five times
- Reduces transition time dramatically

AcuScreen NDT PRO Software

The software is the transition between radiographic film and digital radiography. This software will improve the performance of your film digitizer, giving you processing tools to enhance images and preserve every minute detail when converting them into digital form, which will enable you to correctly interpret radiographs.

AcuScreenNDT Gateway will allow you to adjust your scanner's brightness/contrast settings for dealing with darker older films. You won't miss any relevant specks and spots: porosities, burn-throughs, cracks, offsets and undercuts - you will nail them all on the digital image. You will be able to measure distances, areas, angles, as well as percentages of abnormalities (discontinuities) in particular ROIs. Make your own reports, which will be stored with images in the database.

EG430NDT Automatic Film Processor

NDTS is pleased to announce its co-operation with M/s. Echo Graphic ApS, Denmark for Automatic Film Processors. The EG430NDT film processor offered by Echo Graphic is configured for optimum handling of films in the NDT industry. The processor is easy to maintain. The easy access for regular cleaning ensures a long lifespan and trouble-free functioning of the processor.

The clean design and low noise level fit into today's modern working environment. The processor is supplied with an effective exhaust fan for removal of chemical fumes from the conveyor, processor and installation site. The control panel with a graphic interface will normally not require any intervention, but provides information about status. A film bar shows the position of films currently being processed.



The EG430NDT is known for reliability and easy maintenance. Deep tanks and long rack lengths determine the process speed and contribute to an even density. The processors are of modular construction, and the racks are built after the principle "staggered rollers".

EG430NDT Features:

- NDT Cycle times 2-8 min
- Low Power Consumption
- Dryer operates at low temperature
- Robust stainless steel construction
- European quality & reliability

Asset Integrity Management Services

Process industry and manufacturers are expected to maintain a high standard of quality control and quality assurance throughout their operations in order to ensure proper plant operations, reliability and maintenance excellence.

Asset Integrity Management Services are centered on helping oil and gas industries and manufacturers to extend their asset life cycles, employ an effective risk management system and optimize production safety by improving asset integrity.

- Risk Based Inspection (RBI)
- Reliability Centered Maintenance (RCM)
- Safety Integrity Level (SIL)
- Fitness for Service (FSS)
- VAIL – Plant – A complete Asset Integrity Management Solution
- Quantitative Risk Analysis (QRA)
- Process Hazards Analysis Services (PHA)
- Health, Safety & Environment Critical Equipment Systems (HSECES)



TRAINING & CERTIFICATION

as per IS: 13805/SNT-TC-1A/BS-EN-ISO

Our training & certification head **Mr. Vasanthpraveen Kumar** delivered a talk during pre-conference tutorial [**Advanced Industrial Application in Ultrasonic Examination (Phased Array & TOFD)**] organized during NDE 2014.



Training Schedule — January - March 2015

COURSE ID	COURSE	DATE	TOTAL HRS
15-01	Familiarization - Phased Array & TOFD	06 - 10 Jan	40
15-02	Phased Array Ultrasonic Testing (PAUT) Level II as per SNT-TC-1A	14 - 30 Jan	80
15-03	Time of Flight Diffraction (TOFD) Level II as per SNT-TC-1A	02 - 09 Feb	40
15-04	Familiarization - Phased Array & TOFD	16 - 20 Feb	40
15-05	Phased Array Ultrasonic Testing (PAUT) Level II as per SNT-TC-1A	24 Feb - 11 Mar	80
15-06	Time of Flight Diffraction (TOFD) Level II as per SNT-TC-1A	16 - 24 Mar	40

Company News

Calibration Center for ultrasonic testing machines as per ASTM E317

NDTS India with active support of M/s. Sonatest Limited, UK has set up facilities to provide calibration services for ultrasonic flaw detectors in accordance with the international standard ASTM E317.



The calibration covers checking the performance of the ultrasonic instruments, including its stability, transmitter pulse parameters, receiver response parameters & time-base linearity. Please contact customer support department (support@ndts.co.in) for calibration charges.

Upcoming Trade Show

NDTS India will exhibit in Weld India 2014-2015, to be held at Jamshedpur, 22 - 24 January 2015. For more information please feel free to contact us.

We would like to thank all who have visited us at the conferences & trade shows this quarter! • NDE 2014 • ADIPEC • Indian Nuclear Energy • Tube India • NANSO Business Meet

