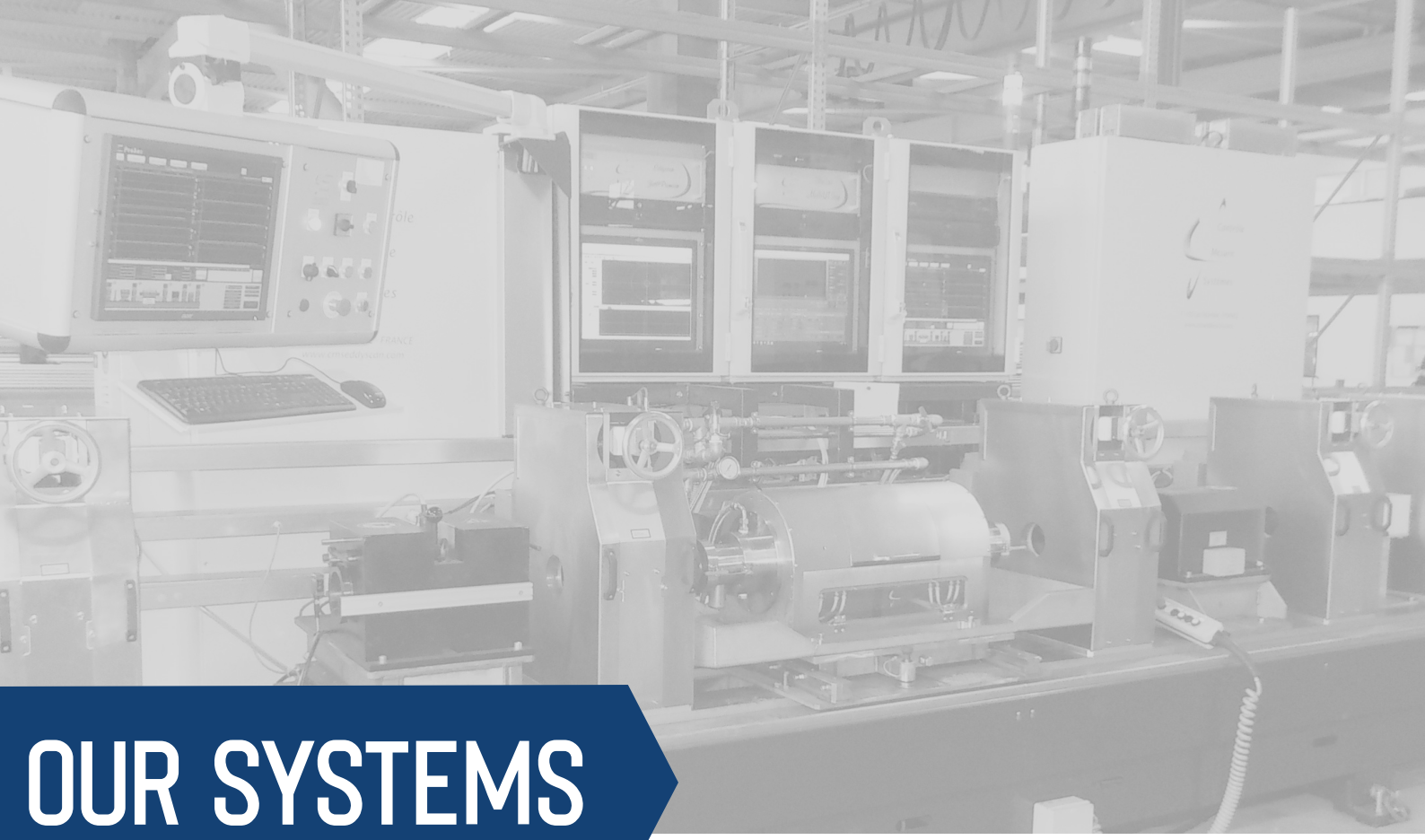


OUR SYSTEMS

- ROTATING HEADS ROTOUTSCAN
- CONTROLE WITH DIP TANK
- BAR AND BILLET INSPECTION
- AUTOMATIC WELD CONTROL

ROTATING HEADS ROTOUTSCAN

THE ULTRASONIC ROTATING HEAD ROTO.UT.SCAN ALLOWS THE DETECTION OF INTERNAL AND EXTERNAL DEFECTS OF ANY ORIENTATION, AT HIGH SPEED ON THE PRODUCTION LINE AND/OR PERFORMS DIMENSIONAL MEASUREMENTS (ID, OD, HIGH INSPECTION THICKNESS MEASUREMENT...)

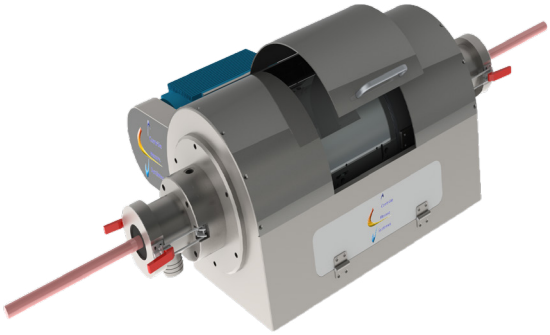
It is generally dedicated to the control of long products such as tubes, bars and wires made of stainless steel, carbon steel, titanium...

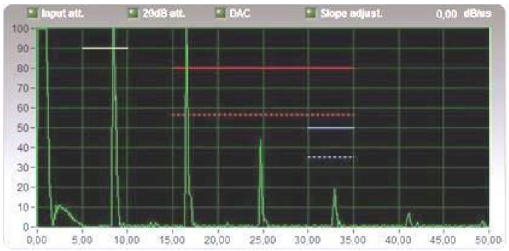
MAIN ADVANTAGES

- Very high-speed inspection
- Minimum detected defects size : 25 µm of depth
- Dimensional measurement :
  - Accuracy wall thickness measurement : 2 µm
  - ID, OD : 3 µm
- Great modularity : fully adaptable to the configuration requested
- Range of products inspected : from 4 to 250mm

RANGE OF PRODUCTS

	UTR-25	UTR-40	UTR-65	UTR-90	UTR-130	UTR-180	UTR-250
Range of diameter (mm)	4-25	6-40	12-65	18-90	28-130	42-180	70-250
Rotation speed (rpm)	8000	6000	4000	3000	2000	1200	900





Defects display in the inspection window

OPERATING PRINCIPLE

Ultrasonic translators are rotated at very high speed in a water box (cassette) around a controlled product (tube, bar, ..) moving in translation at a high speed through the ultrasonic rotating head.
The combination of translator rotation and product translation therefore offers an inspection with a helicoidal pitch.
The translators are individually adjustable in height and can be rotated extremely precisely in three axes.
The transmission of the injection and reception signals between rotor and stator is contactless.
The signal received is processed in real time and compared with the alarm thresholds defined directly in the supervision.

STANDARD EQUIPMENT

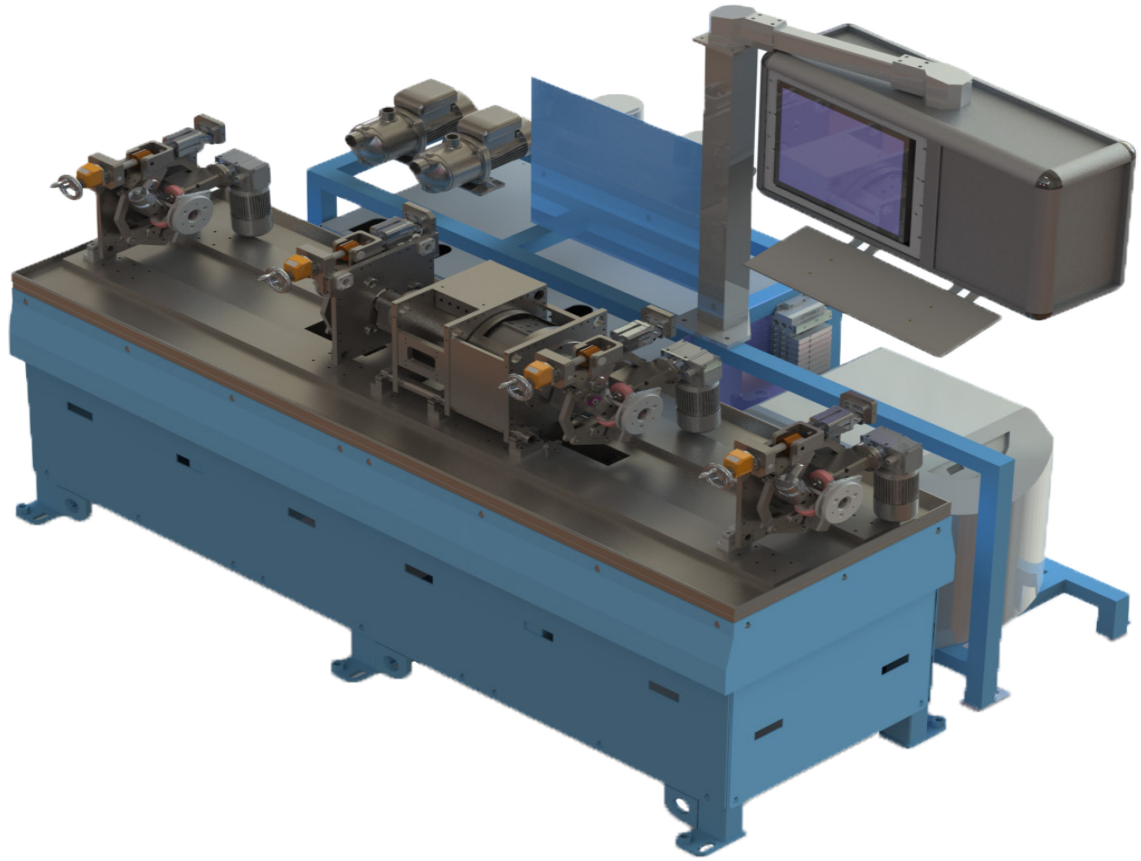
- Rotative head equipped with its signal contactless transmission system and its translators
- Hydraulic complete circuit with electronic management
- Modular cassette according to the configuration requested (defects detection and / or dimensional measurement)

OTHER CONFIGURATIONS AVAILABLE

- Mechanical bench
- Supervisor software probus for collections, treatments and analysis of the signals
- Integration of additional systems (EC, laser...) for a complete inspection of the product

CONFIGURATION EXAMPLE

Combined NDT bench composed of EC & UT equipments for seamless carbon steel tube from 25 to 90m



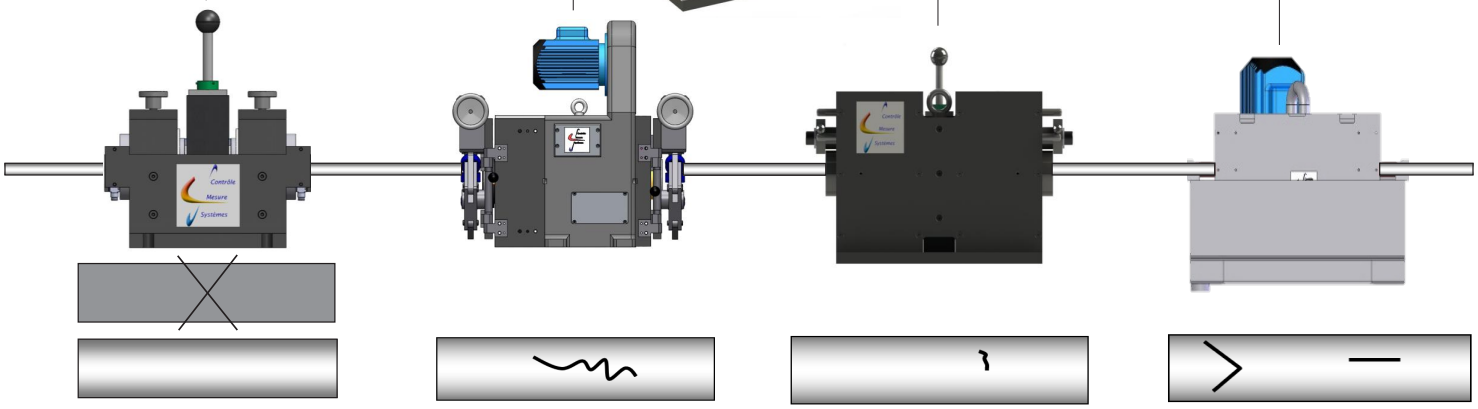
CONFIGURATION EXAMPLE

Complete inspection of bars by Eddy Current and Ultrasonic inspections

<u>EC cabinet including:</u>
Zet@Master 5 channels (long defects)
Zet@Premium 1 channel (short defects)
Zet@Premium TM (material sorting)

<u>UT cabinet including:</u>
Electronics 8 channels

Control cabinet with Supervisor



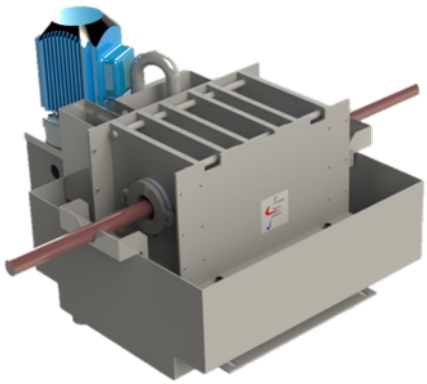
EC sorting support for anti-mix

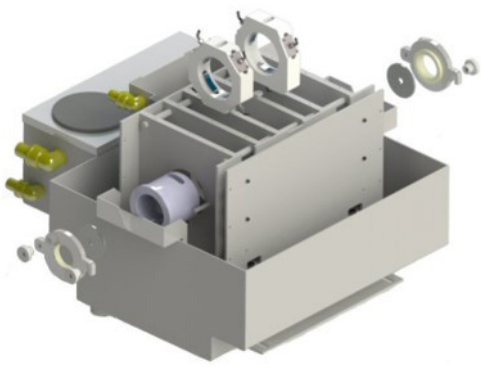
EC RotoETscan for long defects

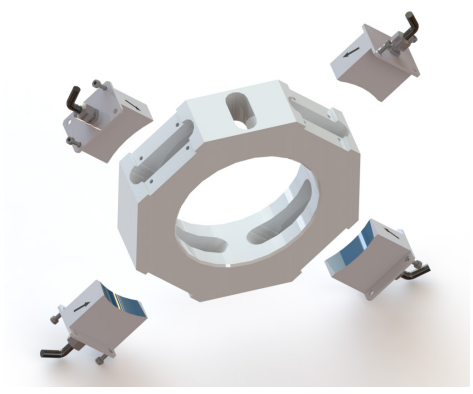
EC magnetizing unit for short defects

UT immersion local tank for internal defects and chevron

BAR AND BILLET INSPECTION







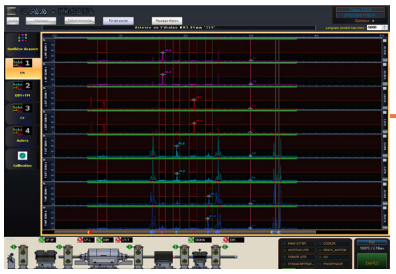
CF AND US BENCHES

CONFIGURATION EXAMPLE

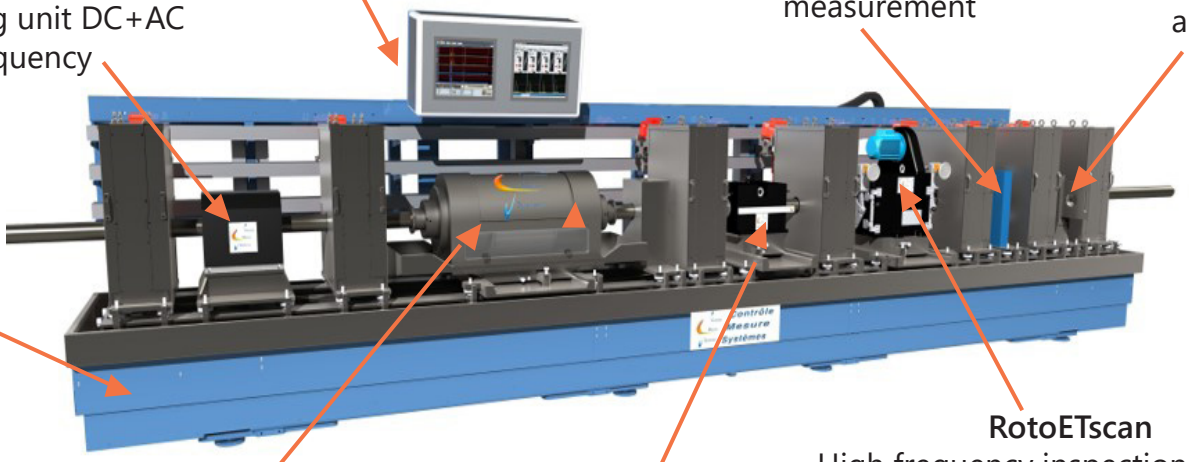
Combined NDT bench composed of EC & UT equipments for seamless carbon steel tube from 25 to 90m

Standard defects
RotoUTscan : internal and external, longitudinal, transversal and SDH
RotoETscan : external longitudinal defect
Magnetizing yoke : through hole
Eddy Current anti-mix

Probus software :
Collect and treats EC & UT data signals



Inspection reports

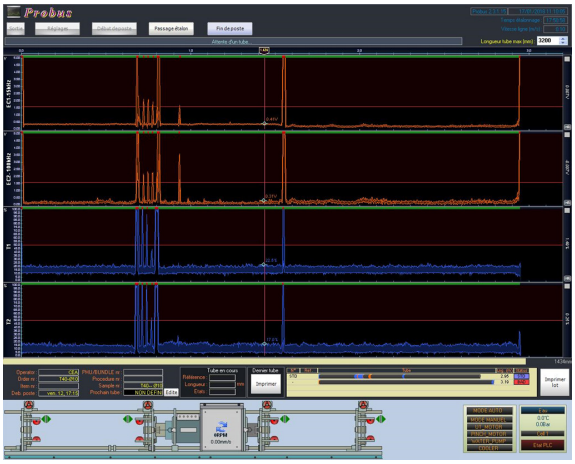


RotoUTscan
Detection of internal/external defects
Standard defects : longitudinal, transversal and SDH
Size : 10 x 0.1 x 0.1 & 0.8mm under the skin to 0.5mm
Thickness measurement with accurate of 3µm

RotoETscan
High frequency inspection to detect longitudinal defects
Standard defects : longitudinal defects
Size : 10 x 0.2 x 0.1

EC encircling coil with magnetizing yoke
Low frequency inspection for detection punctual defects
Standard defects : through hole
Size : Ø 0.8mm

PROBUS SUPERVISION



SUPERVISOR SOFTWARE USED IN NON DESTRUCTIVE TESTING APPLICATIONS PARTICULARLY FOR INSPECTION OF TUBES, BARS AND WIRES IN PRODUCTION LINE.

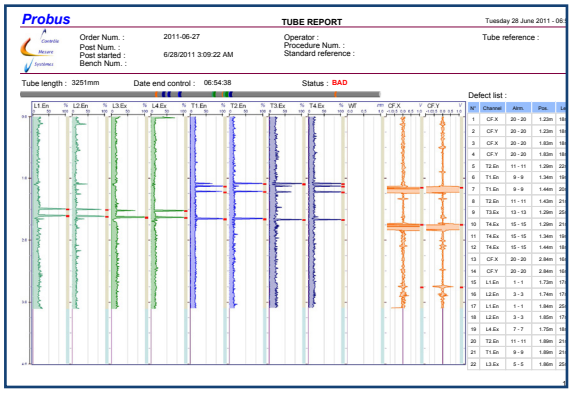
Its goal is to collect measures of various NDT elements, to display, analyse the signals, make a sorting decision and to produce inspection reports.

Probus is the decision making element of the control bench ; it centralize all the sensors data of the ligne and is able to pilot the actors on it.
The application dialogues directly with the automation of the control bench, which it serves as Human Machine Interface (HMI).

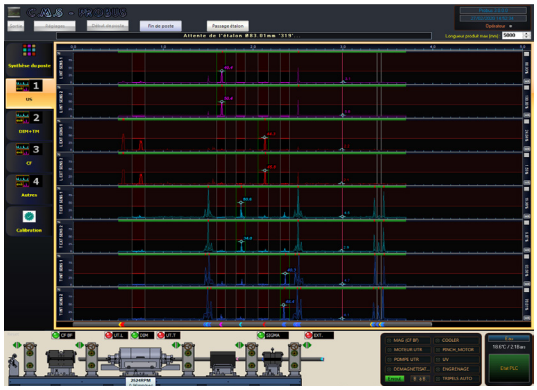
The software stores the inspection results as reports by product and batch ; these reports can be used as control evidences by quality departments and customers.

MAIN ADVANTAGES

- Connection of an EC system for the detection of surface detects
- Flexible configuration : management of several NDT elements
- Inspection reports by product and / or batch displaying the signals of all channels used, and listing the defects detected with their location
- Network connection for remote assistance
- Allow to meet the requirement of international normatives (ASTM, API, DIN, SEP…)
- Allow the production of a complete automated control with the supervision of all parts of the production line and interfacing with a factory L3.



OPERATING PRINCIPLE



- The different NDT elements communicate with the supervisor software.
- It memorizes the analog signals (values measured by the NDT elements).
- These values are displayed as graph (stripcharts).
- Alarms thresholds can be triggered for each channel.
  When a signal passes the alarm, it is display on the screen and the product is then considered as defective.
- The supervisor software can manage several types of signals : UT signal used in fault detection, UT signal used in dimensional measurement, EC signal...
- Finally it allows to pilot the good/bad sorting of the product or to pilote a marking system.

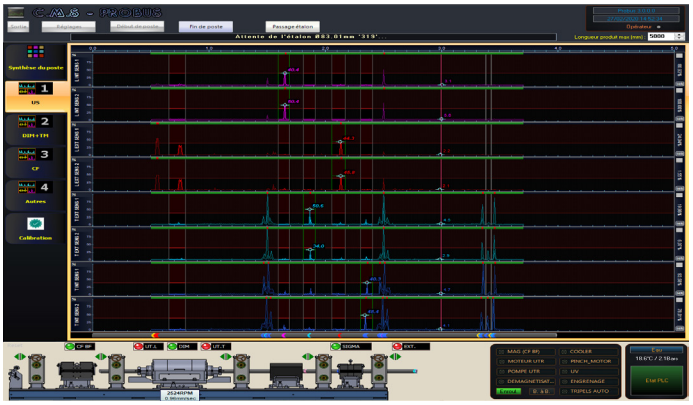
ASSOCIATED SYSTEMS

- Ultrasonic rotating heads RotoUTscan
- Eddy Current rotating heads RotoETscan
- Eddy Current supports coils
- Eddy Current magnetization
- Eddy Current demagnetization
- Other inspections examples

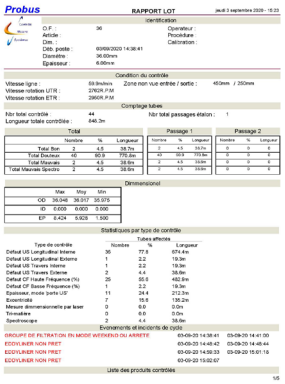
CONFIGURATION EXAMPLE

Complete control bench for stainless steel tubes inspection

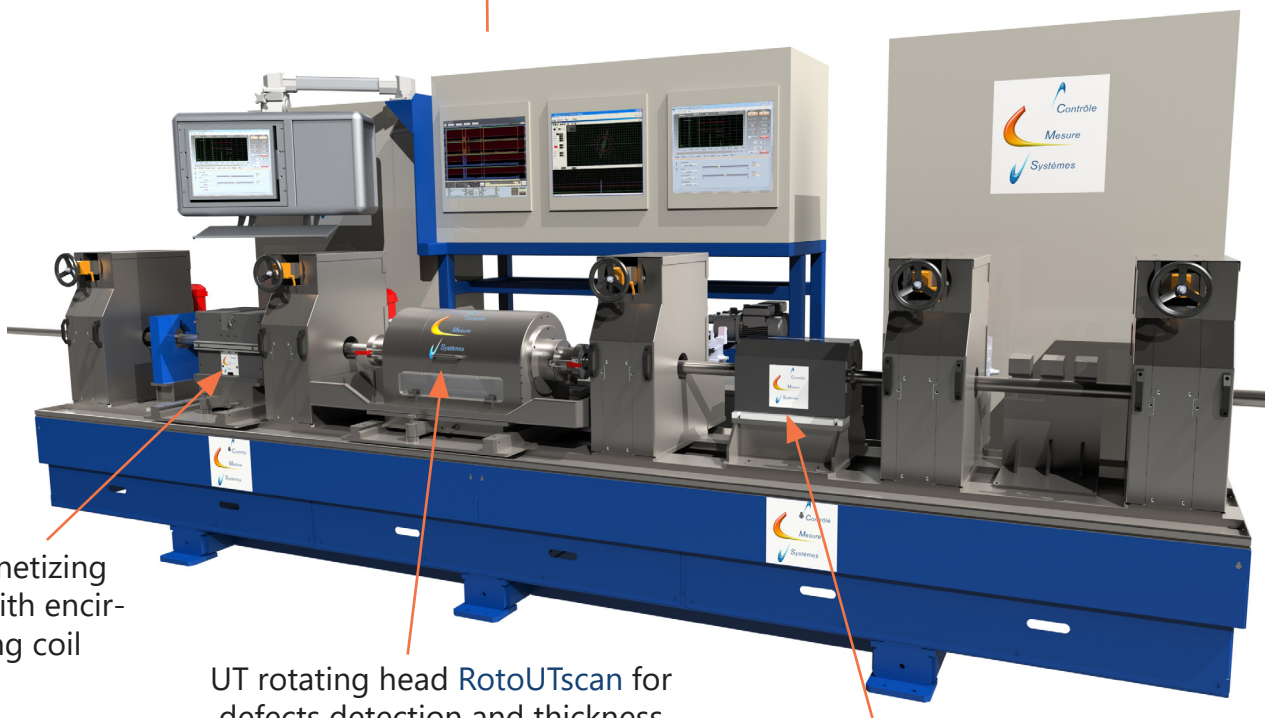
Supervisor software Probus



Inspection report by tube



Inspection report by batch



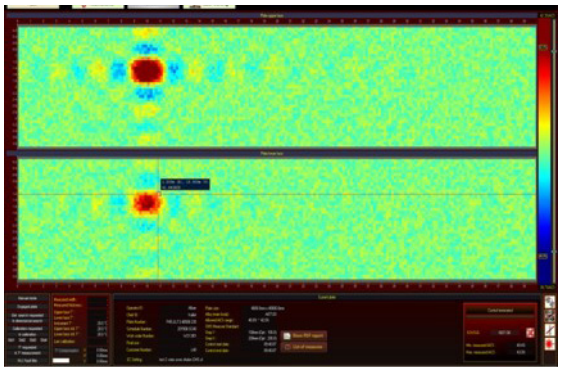
Magnetizing unit with encircling coil

UT rotating head RotoUTscan for defects detection and thickness detection

Demagnetization unit

MAPPING

THIS SOFTWARE CENTRALIZES AND COLLECTS INFORMATION FROM THE NDT EQUIPMENT(S) AND MAPS THE INSPECTED PRODUCT ACCORDING TO THE PRECONFIGURED COLOR PALETTE.



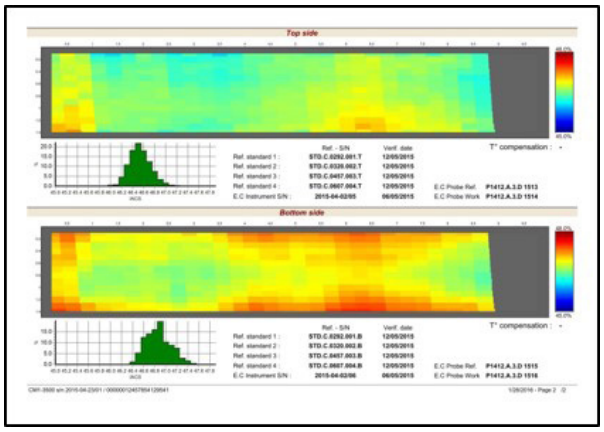
The mapping software is a software used in plate, tube, pipe scanning applications.

The color variation is representative of the defects detection and size,of the variation of its size, or of the dispersion of the conductivity measurement value...

The inspection reports created can be used as a control evidence by quality departments and customers.

MAIN ADVANTAGES

- Possibility to connect with an EC system for detection and positioning of surface defects or of an Ultrasound system for the production of B-scan and C-scan
- Exact positioning of each indicator on the cartography with amplitude measurement
- High resolution of measures
- Connection with encoders
- Network connection for remote assistance

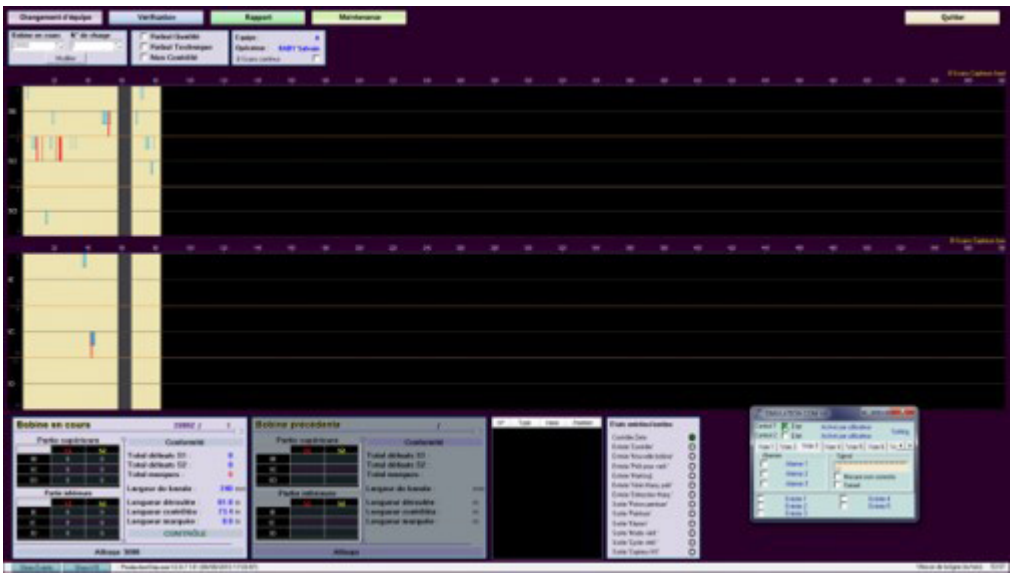


ASSOCIATED SYSTEMS

- Conductivity measurement
- Inspection of tubes, pipes.

STRIP PRODUCTION

SUPERVISION SOFTWARE USED IN MULTI-PROBES APPLICATIONS, AND COVERING A LARGE CONTROL STIPS (STRIPS, FERRULES...)



Operating in a similar way of the production software, it allows in addition to make a slide cartography of the inspected product according to the position of each probe.

MAIN ADVANTAGES

- Information tabs completely adjustable by the customer, on request
- Management of short and long products
- Inspection reports by product and / or batch displaying the signals of all the channels used, and listing the detected defects with their location
- Network connection for remote assistance
- Meets the requirements of international normatives
- Cartography display
- Tracking and displaying data line
- Communication with a PLC and / or the components of the line
- Production of reports, in database format available