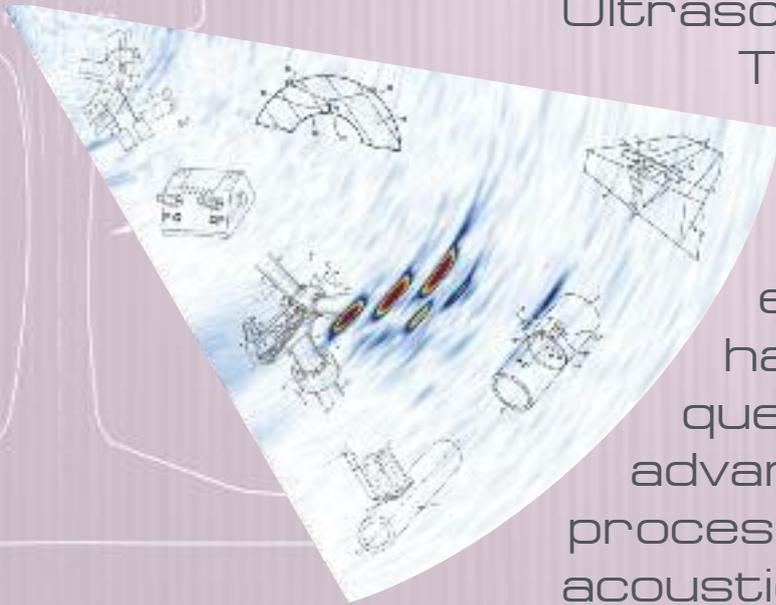


DASEL YOUR PARTNER IN PRODUCTIVITY & SAFETY

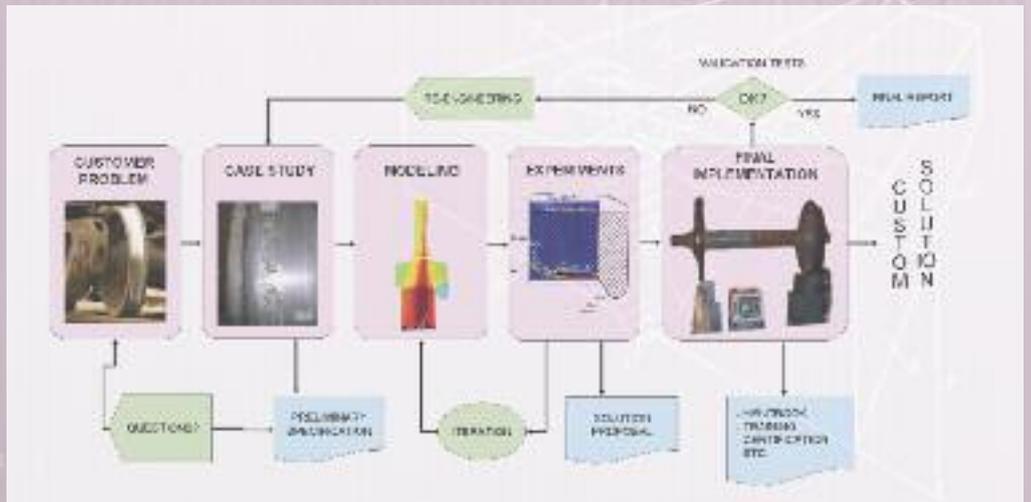


Ultrasonic Inspection

Techniques are among the most commonly used for materials and components evaluation. Their use have become more frequent due to continuous advances in the processing and analysis of acoustic images.

Non Destructive Testing (NDT) has become an essential activity in certain industrial fields where the integrity of critical parts and components must be ensured, performing inspections during the manufacturing process as well as during the service. Nowadays, the customer is becoming increasingly aware of the profit he can get with a more versatile application instead of a closed solution. This is an important obstacle both for the large equipment manufacturers whose technology adaptation cost is high, and for the third party technology integrators that do not have the knowledge to properly modify the products.

Our choice is precisely the reverse: as we have all the knowledge about our technology and the capacity for its fast modification, **we can target a wide range of applications in a short period of time and at competitive prices.**



DASEL is a company specialized in the development of high-end ultrasound technology. We offer at the same time flexible solutions according to each customer requirements. Therefore the quality level of our products has the highest priority. Quality is a commitment that DASEL applies in all production areas to maintain traceability of its manufactured products. For this reason the company has been certified ISO 9001:2008 by Bureau Veritas for equipments production and calibration.

ENGINEERING AT THE SERVICE OF ULTRASOUND SYSTEMS

Modular and Re-Configurable systems:
The key to success in custom solutions.

DASEL develops all its products with a modular architecture and using high-density reconfigurable devices (FPGAs). Given the high cost for new hardware development, this design philosophy allows to adjust our systems to many different applications, with the incorporation of new functions or specific algorithms with no need to upgrade the equipment electronics.

PRODUCTS OVERVIEW

Dasel manufactures Conventional UT and Phased Array Systems. All our products include a set of innovative signal processing features, implemented in hardware for real-time operation.

Several of these algorithms are unique in ultrasound market, like Electromagnetic Interference Filter (EMI), Data Reduction without Peak Loss (DRP), the Grain Noise Reduction Filter (GNR) and autofocus phased array.

DASEL also offers a set of complete software applications (ULTRAVIEW, SCANVIEW, TOFDVIEW, FOCALSIM) and library functions for different

Demonstrated ability to develop systems from a single channel to hundreds of channels

programming environments as C++, LabView or MatLab, in order to ease the integration of our equipments into automatic inspection lines. Moreover, making use of these libraries, our systems become versatile and powerful ultrasound tools for scientific research.

Conventional UT	Phased Array Systems	Multichannel
ULTRASCOPE USB	SITAU-MC series	DIFRASCOPE
ULTRAWOOD	SITAU-LF series	AIRSCOPE MX
AIRSCOPE TT	SITAU-FP series	MULTICHANNEL 32
ULTRASCOPE C	AIRSCOPE PA	
AMPLUS-32		

R&D ACTIVITIES



DASEL has a R&D department as well as a laboratory where the final assembly, the verification and the calibration of the manufactured systems is carried out. But most of the DASEL R&D needs are covered by research contracts agreed with the Spanish National Research Council (CSIC) and several Spanish Universities and Research Centers.

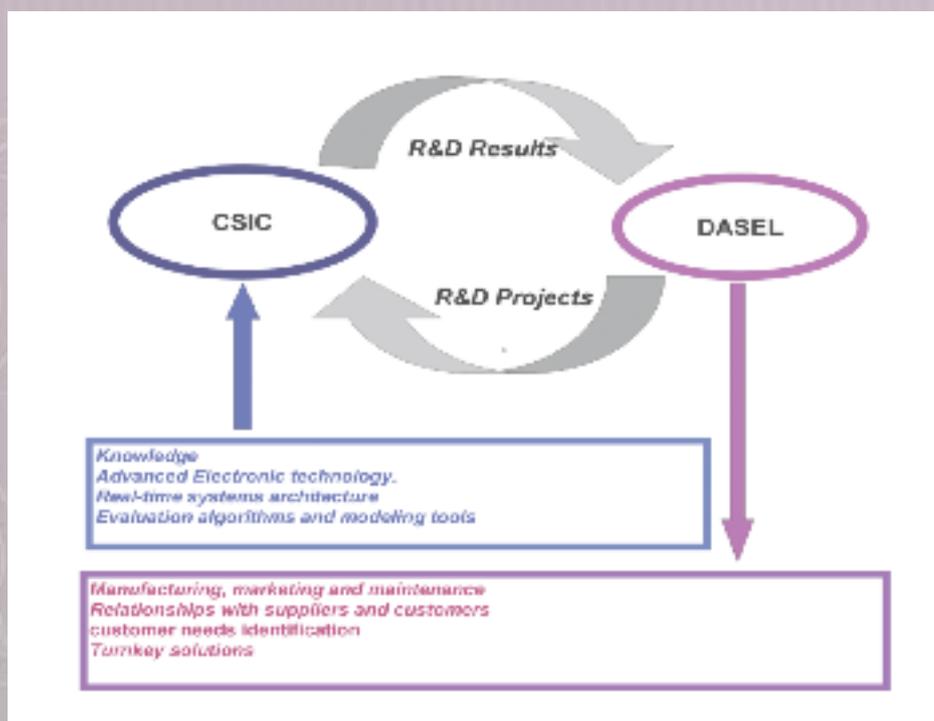
With these projects, DASEL receives the scientific knowledge and takes over the complementary tests of engineering, final product design, commercialization and maintenance.

DASEL dedicates great effort in R&D with the objective of improving and adapting its products to the needs of its customers.

On the other hand, the proximity of DASEL to the specific needs of its customers, together with the deep knowledge of the technology, opens new opportunities to start new projects, which are frequently undertaken in cooperation under R&D contracts.

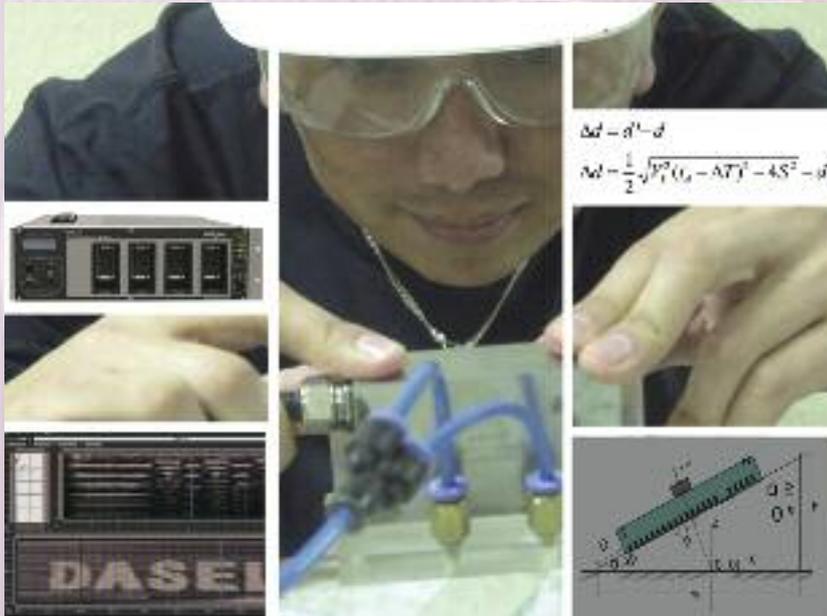
This way, the joint ultrasound skills of the CSIC and DASEL, has allowed to tackle many NDT problems from an innovative and original point of view. The result is the development of a high-performance technology with modular and reconfigurable design, which allows solving problems that stay out of the possibilities of competitors.

RESEARCH BACKGROUND



The consolidated relationship between CSIC and DASEL provides a permanent guarantee that will continue its research and innovation activities to get improved NDT systems and methods in the future, keeping the technology at the state-of-the-art. This has been the pathway followed by the two institutions along their history.

ENGINEERING



Dasel has developed a flexible technology to provide their clients with tailored solutions according to their needs.

The engineering process usually starts with a feasibility study to check if the available ultrasonic techniques are able to obtain the desired results (resolution, repeatability, detectability, etc). Some times a deeper research work is required, which is accomplished by DASEL or CSIC depending of the project scope. In this last case, it is usual to formalize a spe-

cific R&D contract.

Once the feasibility study is finished, the design and manufacturing guidelines for the equipment are established. DASEL is proprietary of its ultrasound technology and has the knowledge to modify or redesign whatever part is needed, which is an important advantage over its direct competitors.

Some resarch works developed with DASEL equipments:

- J. Camacho, M. Parrilla, C. Fritsch "Phase Coherence Imaging" IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control (TUFFC), 56, 5, 858-974, May 2009.
- J. Brizuela, A. Ibañez, C. Fritsch "NDE system for railway wheel inspection in a standard FPGA" Journal of Systems Architecture, Volume 56, Issue 11, November 2010, Pages 616–622.
- J. Ealo, J. Camacho, C. Fritsch "Airborne ultrasonic phased arrays using ferroelectrets: A new fabrication approach" IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control (TUFFC), 56, 4, 818-858, April 2009.
- J. Villazón, A. Ibañez, J. Camacho, J. Ealo "Evolutionary algorithms for optimal ferroelectret arrays design" 2009 IEEE International Ultrasonics Symposium, 729-732, Rome, Italy, September 2009.
- M. Parrilla, P. Nevado, A. Ibañez, J. Camacho, J. Brizuela, C. Fritsch "Ultrasonic imaging of solid railway wheels", 2008 IEEE International Ultrasonics Symposium (IUS2009), 414-417, Beijing, China, 2008.
- J. Ealo, J. Camacho, F. Seco, C. Fritsch "Ultrasonic air-coupled inspection of textile materials using ferroelectret-based phased arrays", 36th Annual Review of Progress in QNDE, Rhode Island, USA, 2009.
- Carlos J. Martín-Arguedas; David Romero-Laorden; Oscar Martínez-Graullera; Manuel Pérez-López; Luis Gómez-Ullate. An ultrasonic imaging system based on a new SAFT approach and a GPU beam-former. IEEE Trans on UFFC. Volume: 59, Issue: 7.
- B. Yelicich, J. Camacho y H. Gomez "Doppler transcraneal para monitoreo continuo", 7th Ibero-American Congress on sensors (Ibersensor 2010), Lisbon, Portugal, November 2010.