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DISCOVER
A NEW DIMENSION
IN AUTOMATION AND QUALITY CONTROL: 3D

DISCOVER A NEW DIMENSION IN AUTOMATION AND QUALITY CONTROL: 3D

A NEW LEVEL OF 3D TECHNOLOGY

The AQSENSE engineering team has mastered the art of creating ultra-fast 3D shape processing and surface inspection algorithms for data gathered through a variety of acquisition techniques. The software library SAL3D is the resulting representation of a unique know-how developed over more than 5 years, and is constantly growing with new developments. The library is offered as a standard product to be integrated with a wide range of innovative hardware platforms as well as in the form of customized tools for the machine builder. The sophisticated software design for scalable multi-processor architectures offers machine builders, system integrators and specialized end users a high-performance inspection tool set capable of meeting the most demanding application needs.

A dynamic technical environment constantly challenges and encourages engineers to innovate and introduce advanced technologies into the market which allow us to enjoy better quality products, new medical advances or watching movies with fantastic 3D special effects.

AQSENSE is an innovative company that has made the difference in 3D technology for the manufacturing and non-manufacturing industries. The 3D software tools of the company allow for a whole new dimension in accuracy, processing speed and reliability, thus bringing significant benefits to a wide range of industries:

Major yield improvements and cycle time optimizations for weight and volume calculation, automatic slicing and packaging within the **Food Processing Industry** are the direct results of increased accuracy and speed in 3D measurement. **Dentists, orthodontists and prosthetists** benefit from AQSENSE 3D metrology as complete 3D data sets are made available for medical diagnosis and treatment as well as for prostheses and dental implant manufacturing. The **Automotive Industry** and a wide range of other manufacturing sectors can profit extensively from AQSENSE's unique technology, as rigorous quality standards can be accomplished by shifting current dimensional quality control systems from the off-line Coordinate Measuring Machines to the production line on the factory floor for the 100% inline quality inspection of the parts produced. **Camera manufacturers** and **software suppliers** alike have embraced AQSENSE 3D tools as they are adding a whole new dimension to classical 2D machine vision products and methods.

AQSENSE was founded in 2005 in the charming city of Girona, north east of Spain. The company operates a first-class Research and Development centre in Girona, as well as Marketing and Sales offices in Germany and Spain and utilizes distribution channels across Europe.

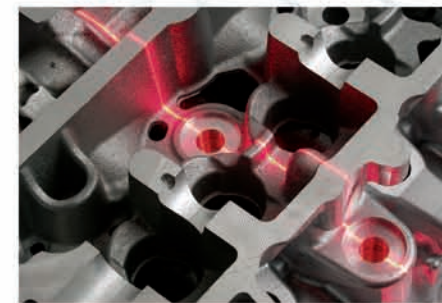
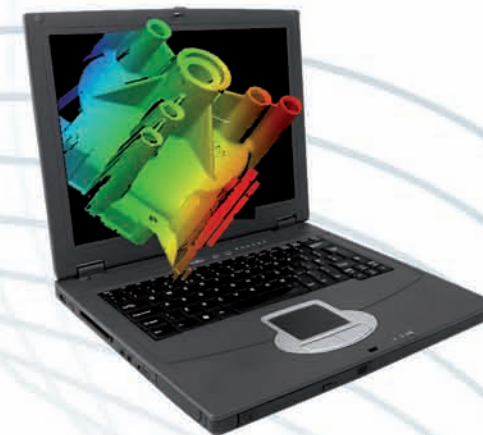
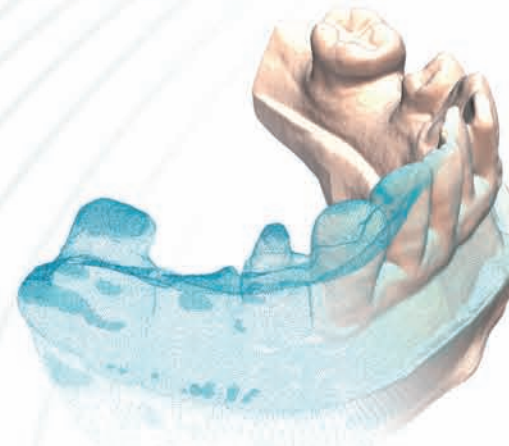


IMAGE COURTESY OF: AQSENSE'S PARTNER
FALCON-VISION, HUNGARY

FAST

The 3D Shape Analysis Library, SAL3D, is a set of functions and tools for processing Clouds of Points acquired from any 3D vision source. A million 3D points can be compared to a 3D model in less than a second with the maximum accuracy; hence for the first time ever 3D inspection at production speed and with high accuracy is available for inline production processes and 100% of the parts produced.

EASY

All the power of SAL3D is deployed to software engineers and application experts in a comprehensible and user-friendly way for every single step in the processing chain: high accuracy 3D data generation, calibration, occlusion compensation, virtual alignment, 3D point cloud comparison, and deviation and defect detection.

Inspecting different parts independently from the material surface is as easy as switching the part type at the user control panel and thus changing the reference model database in just seconds. Re-calibration is carried out semi-automatically and effortlessly. Complex and expensive high-precision mechanical part alignments are unnecessary as AQSENSE's innovative technologies can take scanned parts and virtually align them against their reference models. Complex dimensional checks are performed while at the same time production line speed and robustness requirements are met.

VERSATILE

AQSENSE 3D Technology is highly adaptable at both ends; developers and application experts can take advantage of the library concept and architecture offering modularity and scalability to ease the integration of 3D technologies into the preferred hardware set up. Customized programming interfaces further enhance the versatility of the AQSENSE 3D toolbox, as well as the frequent addition of new functionality based on customer requirements.

INNOVATIVE

3D technology has been used for years by various industry sectors for a series of tasks in quality control, rapid prototyping, reverse engineering, augmented reality, and more. Thanks to the innovative AQSENSE SAL3D tool box it is now possible to meet the most demanding industry quality standards, enhancing current applications performance or even bringing solutions to industry sectors still waiting for the right technology, by achieving maximum accuracy levels at a very high speed.

By providing some parts of the library in a format applicable to FPGAs, sophisticated 3D technology can even be easily integrated into 2D products and thus move these into new dimensions.

BEYOND SAL3D

AQSENSE offers several services to ensure the successful integration and deployment of the 3D technology in the customer environments. Sophisticated 3D **Simulation** in the early stages of a project provides a feasibility analysis based on reliable data that will ensure the project success without any need for investment in HW or infrastructure. **Training programs** as well as remote and in-house **Support** shortens the learning curve of the customer personnel and enhances the efficiency of the SAL3D integration into the application. Last but not least, **Custom Designs** based on existing 3D libraries and adding new functionalities for specific applications allow system integrators and machine manufacturers to concentrate on their core know-how, resting assured that they always have the best technology at their disposal.

