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Photo: ©iStockphoto.com/mevans

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EDITORIAL

Annick Christina Reckers, Chief Editor

Dear Readers,

Quality plays an important role in nearly everything we do or work with. The quality of an employee's work reflects on the outcome of the company's products and services. The goal of every company is to satisfy 100% of the customers quality expectations and to gain a competitive advantage in the market.
FARO's mission is to enable our customers' products and processes to be the best in the world. To support them in reaching this level of excellence, we continuously invest in hardware and software developments.
2010 will be a year of interesting innovations which can help you improve the quality of your processes.
Read in this issue how FARO products are used by big and small companies to save time and money and to ensure that quality standards can be met at the same time.

We wish you an enjoyable reading.

A. Reckers

IMPRINT

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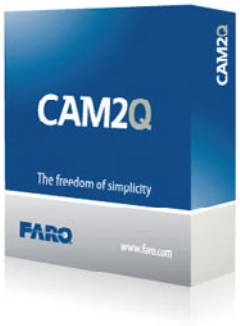


The FARO Laser Tracker ION is the most accurate large volume laser tracker worldwide. FARO CAM2 Q is a quick and easy 3D measurement software solution.

World's most accurate large volume laser tracker & CAM2 Q software

PRODUCT NEWS *In autumn 2009 FARO introduced the brand new FARO Laser Tracker ION and continued roll-outs of the CAM2 Q software versions.*

Replacing conventional tools such as tape measures, piano wire, plumb bobs, and theodolites customers have come to know FARO Laser Trackers for their use in applications such as alignment, machine installation, component inspection, tool building and setup, and reverse engineering. Companies of all sizes rapidly see the benefits of implementing this tool and realise a complete return on their investment.

Specifically, the FARO Laser Tracker ION has improved the volumetric accuracy by 27% over the previous model to .002" (.049mm) at 33 feet (10 metres). The measurement diameter range has been extended by 36% to 361 feet (110 metres), and the weight has decreased by 12% to 39lbs (17.7kg).

A patented feature available exclusively in the ION is Agile ADM. Agile ADM represents the latest advancement in Absolute Distance Meter (ADM) technology. The ION is the only ADM system on the market that is fast enough to allow for high density scanning without relying on an interferometer (IFM). This system is less complex than the technology used in other laser trackers – with Agile ADM there is no need to switch between ADM and IFM-based systems.

@ WWW.FARO.COM/LASERTRACKER

NEW FARO CAM2 Q SOFTWARE RELEASES

Engineered for maximum efficiency in computer-aided measurement and 3D inspection, FARO's proprietary CAM2 Q software allows users to complete high-precision measurement jobs with speed and ease. Offering the flexibility to measure the way the process or job requires, CAM2 Q is ideal for CAD and non CAD-based inspection and Geometric Dimensioning and Tolerancing (GD&T). CAM2 Q sets itself apart from others by providing a clean attractive user interface, a variety of alignment techniques, automatic nominal association to various features, built-in quick-tools for building and running part programs and image-guided measurement to make it easy for operators to measure parts.

@ WWW.CAM2-Q.FARO.COM

WHY PICTOGRAPHS?

In the FARO News these icons will guide you through the different application fields of our 3D measurement technology:

INSPECTION
Parts inspection and providing measurement reports are essential in today's lean manufacturing environment. They help reduce production waste and losses or down time due to nonconformance.

ALIGNMENT
Precise alignments of any machine, fixture or part can make all the difference in the quality of the finished product.

CALIBRATION
Calibration is required if initial setups of e.g. machine tools can't stand the test of time and deviations appear.

REVERSE ENGINEERING
Reverse engineering allows us to create virtually anything we can touch. To record and reproduce real items, they are digitized and displayed as fully surfaced CAD models using our 3D measurement technology.

AS BUILT DOCUMENTATION
Our measurement devices are able to easily and quickly deliver documentation data of digitized buildings, process plants or objects.

"As pioneers we are always trying to stay one step ahead and that is why we chose the FARO Laser Tracker for our quality control and alignment processes."

MICHAEL ANDERSEN,
SALES DIRECTOR AT SKYKON

TOP STORY

Shaping the future of energy

Wind energy is an important beacon of hope for everyone interested in a cleaner and more sustainable energy supply. Today's wind turbines have capacities of up to 5MW thanks to rotor blades that can be over 50 metres long and weigh up to 18 tonnes. In this fast-changing environment where design refinements are introduced almost daily, only one rule is infallible: greater accuracy means greater efficiency.

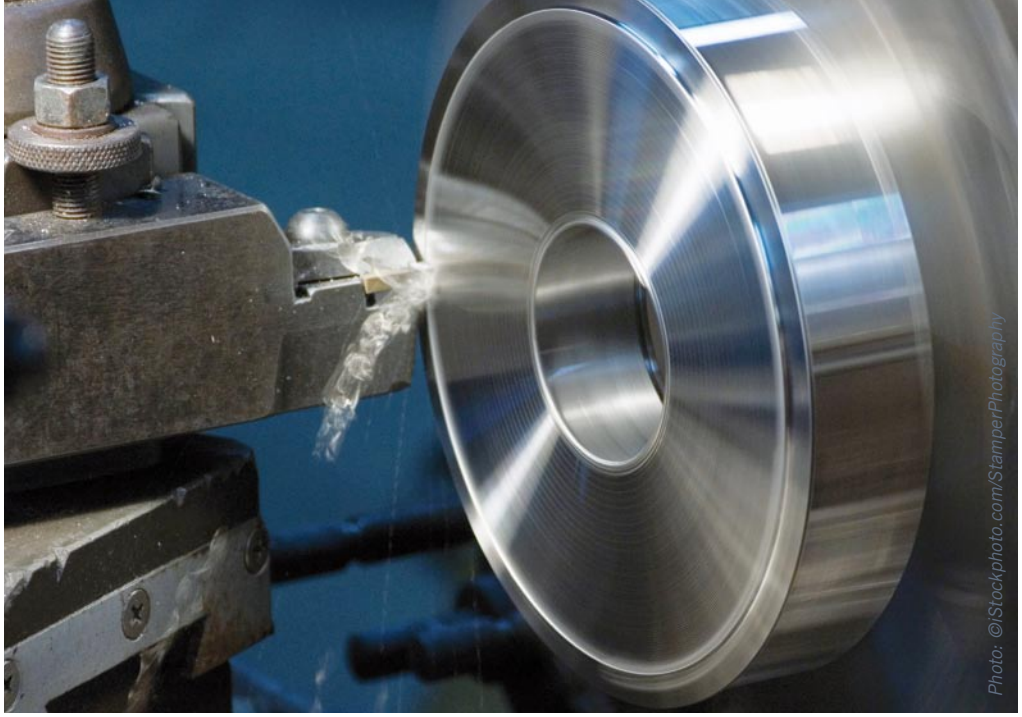
"Skykon, world leader in production of plugs and moulds for wind turbine rotors, was founded because we saw the future of the industry and set out to meet the anticipated need," says Sales Director Michael Andersen. "As pioneers we are always trying to stay one step ahead and that is why we chose the FARO Laser Tracker for our quality control and alignment processes."

The techniques and tools developed by Skykon allow the same high levels of accuracy no matter how large the final product will be. Skykon is now able to produce a single plug of up to 52 metres long directly from the plans. But working in sections and using the Laser Tracker for alignment means there is no limit to the final plug dimensions.

@ **WWW.SKYKON.COM**

Correction:
FARO News 01/09, Special Report, page 9

The picture displays Enercon wind turbines instead of Vestas as implicated.



CNC lathe turning stainless steel.

Delighted with the ergonomy

METAL WORKING *A dynamic French machining company chooses the FaroArm® to provide 100% quality assurance of outgoing parts.*

Réa Meca is a SME that specialises in precision machining of medium-sized metal parts for aerospace, agriculture, defence and education. As more customers began asking for a measurement report to confirm the dimensions of the CNC produced parts, Réa Meca decided to invest in the most advanced measurement tools.

Before owning the FaroArm Réa Meca used callipers and other traditional tools to measure the parts. But this did not allow the verification of complex shapes or provide the ability for 3D coordinate measurements. After an on-site test of the FaroArm Platinum former Réa Meca CEO, Gilles Ruelle, was entirely satisfied and went ahead with the purchase: "I chose the FaroArm because of its versatility, manoeuvrability and precision. After looking at the 3D measuring system options on the market, I felt that it offered the most in terms of mobility and flexibility." Quality controller Christopher Bourlarne explains: "The portability of the FaroArm means that I can take it to the place in the workshop where it is most convenient to conduct the measurements."

Part inspection with the FaroArm.

> "Because the FaroArm is well-sealed, I do not have to worry about the dust, water or oil in the workshop environment."
>
> CHRISTOPHER BOULARNE, QUALITY CONTROLLER RÉA MECA

Cyrille Dieu, who took over the position as CEO of the company in June 2009 says: "The main challenge for a company in our field is to satisfy 100% of the customer's quality expectations. Today everyone expects things to be done faster and less expensive. We have to save time because that keeps our costs down so the FaroArm was a good investment. It allows us to ship parts with the confidence that there will be no problems or complaints.

ABOUT RÉA MECA

Réa Meca was founded in 1994 and acquired its CNC tools in 1996. The company continued to grow, expanding its premises in 1999 and has acquired ISO 9001 certification in 2010. Located in Saint-Nazaire on the Western coast of France, it specialises in precision machining of small to medium-sized metal parts for aerospace, agriculture, defence and education. Réa Meca employs 12 management and production staff including one person dedicated to quality control.

FOUR GOOD REASONS

Christopher Boularne, Quality Control at Réa Meca says about the FaroArm:

1. Quality: Precision is a basic requirement for any method of quality control, but the little details are equally important. For example, the good seals against dust and liquids are vital in our machining environment.
2. Ergonomics: The internal counterbalancing of the arm makes it a joy to work with.
3. Reliability: Features like auto-temperature compensation and overload sensors make it really easy to achieve consistent results.
4. Versatile: Being lightweight and portable and offering a number of mounting options allows us to use it wherever is most convenient to measure.

The FaroArm is the portable alternative to a fixed Coordinate Measuring Machine (CMM) available in different versions, accuracies and lengths with up to 3.7m measurement volume.

@ WWW.MEASURING-ARMS.FARO.COM

FARO CAM2 Q – compact and user-friendly

SOFTWARE *d.e.e.p. technologies GmbH played a key role in the development of the FARO CAM2 Q software. Working in close cooperation with FARO's Product Manager for Software, Antonio Carvalho, it assisted in each and every step of its development.*

d.e.e.p. technologies GmbH employs 14 staff members in Augsburg, Germany and develops and manufactures test gauges for major automotive corporations including VW, Audi, Porsche, BMW and Mercedes Benz, who use these for the measurement of plastic components, assembly facilities for plastic parts and automation solutions for injection moulding technology. For the pharmaceuticals industry, d.e.e.p. develops and builds modules of automation systems used for filling phials.

In 2005, the company acquired a FaroArm Platinum, which is used primarily in test gauge reporting. Additionally it is used for monitoring the production of component parts, as well as for checking semi-finished products prior to their subsequent processing. As for the software used in conjunction with the FaroArm, d.e.e.p. had been using CAM2® MeasureX, a software which over time no longer was able to keep pace with the increased requirements. The company found itself compelled to change to a more modern software product. Once d.e.e.p. had downloaded the test version of the CAM2 Q software from the internet in early 2009, the firm came up with new ideas for the further development of this software. As a result, FARO continually received suggestions and ideas for further improvement from d.e.e.p.

Working in close cooperation with FARO Product Manager Antonio Carvalho, d.e.e.p. thus supported the development of CAM2 Q. During each development step, Mathias Buhl, Quality Assurance Officer at d.e.e.p., checked the existing and missing functionalities of the CAM2 Q software, and re-engineered these for specific applications at d.e.e.p as well. In this way, weaknesses in the software were uncovered and subsequently improved in close consultation with FARO.

According to d.e.e.p., CAM2 Q marks a giant step in the right direction. The software is now – thanks to a complete CAD core – also suitable for measurements based on CAD models. Selecting the area to be measured with a simple click of the mouse is now far more user-friendly than before.

CAM2 Q is more compact than competing products and, accordingly, also offers price advantages. The influence on development and the required functionalities have thus far been reassuring.

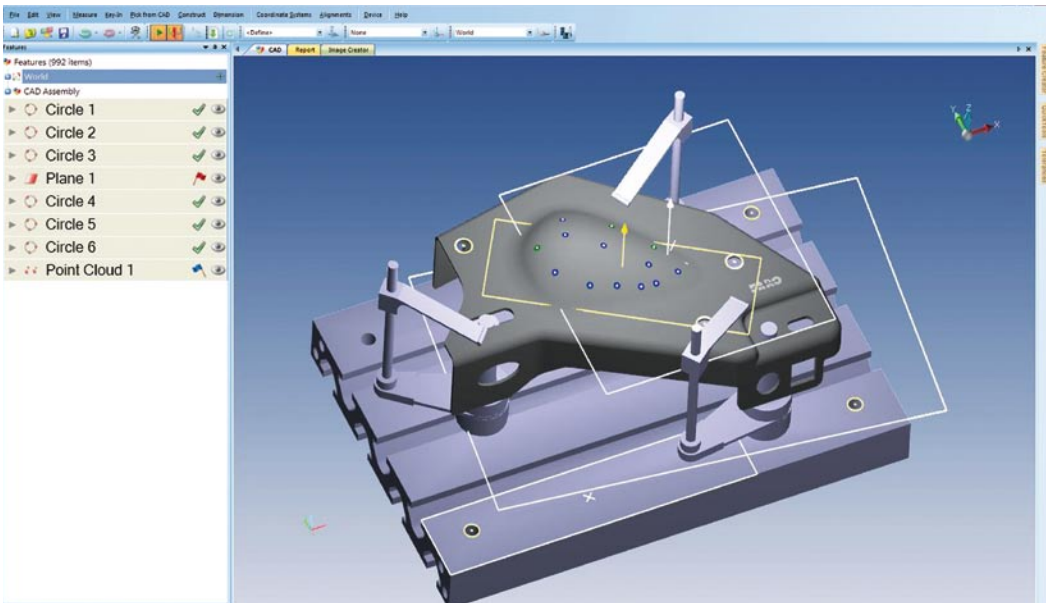
@ WWW.DEEP-TECH.COM

Developing Quality

INTERVIEW *Antonio Carvalho, Director of Product Management Software at FARO speaks about FARO's 3D measurement software solution CAM2 Q:*

WHAT ARE THE MOST IMPORTANT FEATURES AND BENEFITS OF CAM2 Q?

CAM2 Q was developed with 3 core principles in mind: simplicity, freedom and efficiency, which directly translate into user benefits. To start, FARO continues to prove with CAM2 Q that quality control must not be a difficult task. We have taken the simplicity of CAM2 Measure X, its predecessor, to a new level to ensure that even unskilled users can use our systems. Also, we have kept in mind that our systems are used in a variety of environments where workflows differ depending on the task at hand. Secondly, it has been key to provide the user freedom to allow him to do what he needs and when he needs to do it rather than to fix him to a particular workflow. Finally, every new feature we add to CAM2 Q is carefully thought through to avoid unnecessary steps. This translates into efficiency in day to day operations.



CAM2 Q software screenshot

WHAT IS THE ROLE OF CAM2 Q IN QUALITY?

CAM2 Q provides our customers a flexible measurement tool that enables them to measure what they need and provides powerful reporting capabilities that allow reporting their results as their customers need them – no matter if it's GD&T or ISO tolerances.

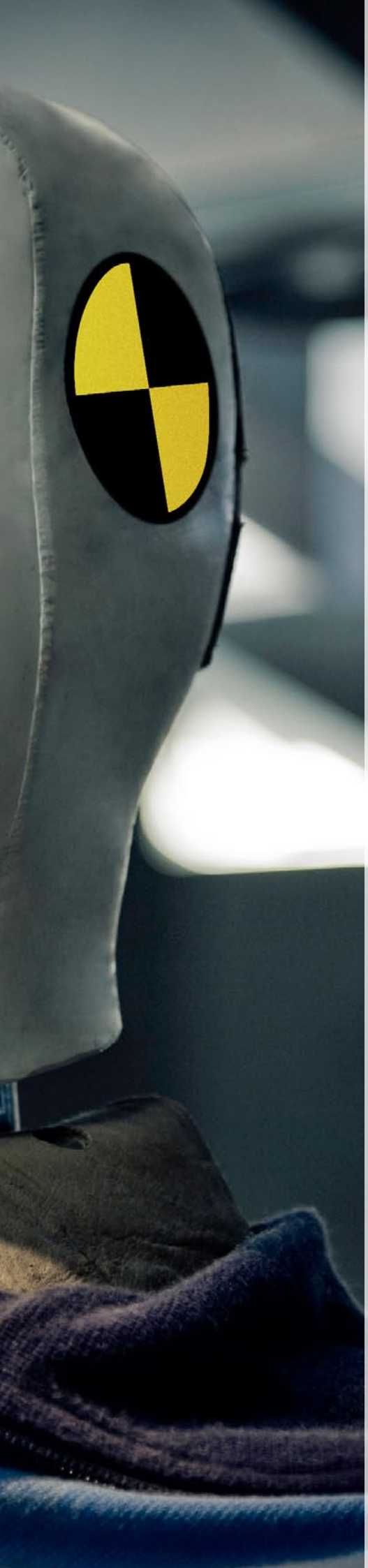
WHICH APPLICATIONS ARE BEST SUITED FOR CAM2 Q?

CAM2 Q is exceptional at measurement of geometry for first article inspections as well as inspecting machined parts to ensure they have been machined to specification, saving our customers from wasting parts that have been casted or welded. With the addition of the new survey functionality, CAM2 Q is also ideal for tracking movement of large parts or structures and checking repeatability or drift of large structures.

WHAT IS THE ROLE OF CUSTOMERS DURING DEVELOPMENT?

FARO recently adopted a new process that allows us to integrate the end user into the development cycle. Every two weeks, a 'production-quality' version of the software is made available to beta users. This allows us to find design and implementation flaws much earlier in the process. Once detected, they are corrected and then validated with the customer long before we have a released product.

@ WWW.CAM2-Q.FARO.COM



QUALITY *For most companies, quality is a competitive factor. But in the automotive industry, quality can be a matter of life or death. From the quality of safety systems and components to the ability to reconstruct accidents, 3D measurements play a key role in improving road safety.*

The testing business

Despite decades of regulatory and technological development, there were still 42,000 fatalities and 300,000 seriously injured on European roads in 2009. One reason is the increased level of road use: Compared to twenty years ago, Europeans travel three times more per day. Another factor is the diversity of road-users: HGV trucks share the streets with small cars and pedestrians. For these reasons, besides behavioural changes, improvements to passive and active safety systems are still required. Passive systems focus on the way the car and component designs react in the case of impact: e.g. improved crumple zones, roll pillars, seat belts or child seats. Active safety covers everything from seat belt reminders to dynamic stability control or ABS systems.

THE TESTING BUSINESS

Independent test centres like TÜV Rheinland TNO Automotive International (TTAI) or Dynamic Test Center (DTC) provide objective assessments of component and car safety for OEMs and report publishers while organisations like ADAC - Germany's biggest automobile club - perform similar functions on behalf of consumers. "Typical tests conducted are frontal, car-to-car side and car-to-pole impact," explains Johannes Heilmaier. He is an engineer responsible for passive safety testing at ADAC e.V., which crash tests some 60 models of cars per year. There are also tests that investigate the effectiveness of seats and headrests. Whatever the test, the basic methodology is the same: The accident is simulated with a full-scale collision or sled-simulation using various types of impactors to represent other vehicles, fixtures or pedestrians. Then the impact-induced accelerations, deformations or distances moved are measured and reported.

To allow comparison of different manufacturers' products, detailed test protocols have been created by consumer organisations like Euro NCAP. Such test protocols define the precise manner in which the car must be prepared and the methods and tools that should be used to measure the resulting deformations.

PLANNING THE CRASH

Crash tests can be full-scale tests where a whole vehicle is destroyed, or individual components such as a child seat containing a dummy can be mounted on a sled and subjected to massive braking forces.

"Planning and preparing a car for the crash test can take up to one week," says Heilmaier. The lubricants and fuel need to be removed and replaced with equal weights of water and measurement reference points need to be carefully determined for the vehicle and the dummy. Everything is defined in the test protocols. Euro NCAP protocols, for example, require the tester to use a 3D measuring system with a tolerance of ±1mm. That is very easy for FaroArms so it is no surprise to see them in frequent use.

ESTABLISHED TOOLS AND WORKFLOWS

"We conduct 200 full-scale crashes per year and about 2 sled tests per day," says Herman Tavenier, Senior Test Engineer at TÜV Rheinland TNO Automotive International, one of Europe's leading test and certification companies. "We have six FaroArms including a FaroArm Bronze, which is over 10 years old, yet it works perfectly. The newer models just got more slick and easy to use."

TÜV Rheinland TNO Automotive International customers include OEMs from all over the world. Some tests are focussed on proving that the vehicle or part meets the regulatory requirements for import approval. In other cases, the test may be part of a R&D development cycle as the manufacturer looks for ways to improve the product quality and safety standards.

While the average full-scale TTAI test takes 3 days of preparation, the measurements conducted using FaroArms before and after the crash can be done in a matter of hours. The FaroArms and measuring software are part of an efficient workflow that produces the client's deformation report or safety certificate with a minimum effort.

RECONSTRUCTING AN ACCIDENT

No matter how stringent the vehicle safety standards, driver error will still cause accidents. At the scene of an accident the police need to clear the site as fast as possible but they also need to secure evidence. Heinz Reber of Dynamic Test Centre, Switzerland, is a specialist in accident reconstruction whose clients include courts and insurers. "The evidence varies: sometimes you have a rough sketch or some skid mark measurements, other times the police have used stereophotogrammetry," says Reber who has been using a FARO Laser Scanner Photon 120 since October 2009. "Our job is to put together all the evidence and try to determine the speeds and positions of the vehicles before the crash."

If the evidence is incomplete, Reber may have to visit the garage and scan the wrecked car or return to the site of the accident to gather further information. "Some police forces like Canton Berne and the City of Zurich already own a scanner, but many do not and this can cost them hours of extra work later," explains Reber.

> "We are among the global leaders in this business built on quality and precision so FaroArms are a logical choice for us."
>
> HERMAN TAVENIER,
> TEST ENGINEER AT TTAI

Worse still, a blocked main road causes massive traffic delays that are bad for the economy. "That is why we will soon start to offer accident emergency scanning services to police forces. It is a great way to get the traffic flowing again faster without compromising the quality of evidence collected."

Once the data has been collected with FARO Scene software, Pointools View Pro software comes into play before the accident can be visualised or reconstructed using crash simulation software like CARAT (Computer Assisted Reconstruction of Accidents in Traffic). This software can even take into account the effect of vehicle loadings and ABS equipment.

RETURN ON INVESTMENT

Since acquiring the FARO scanner, Dynamic Test Centre has been able to expand its range of services and speed up the test and analysis process. DTC is in fact the only Swiss company with their own crash centre: "We mainly serve automobile industry suppliers with sled tests of components ranging from seats to steering columns, but we now also offer guard rail tests," says Reber enthusiastically.

Heilmaier and Tavenier, the test engineers at ADAC & TTAI have always used FaroArms. "When you smash up new cars on a weekly basis, that is a lot of money so you don't want to compromise on your choice of measuring tools," says Heilmaier.

SUMMARY

- Leading European crash test companies certify and assess the quality of components, designs and systems using FaroArms.
- Safety standards have improved significantly over the decades but accidents still take a heavy toll.
- As driver behaviour remains the key factor, the question of who caused the accident is being investigated with more sophisticated methods.
- FARO scanners help police and accident experts gather the evidence and find out exactly how the accident happened.
- Compared to the economic costs of traffic jams or wrecked vehicles, FaroArms and scanners represent modest investments with great efficiency returns.

@
WWW.ADAC.DE
WWW.TT-AUTOMOTIVE.NL
WWW.DTC-AG.CH
WWW.EURONCAP.COM

Scanning a wrecked car at DTC in Switzerland.

Scan of the historic centre of Sirmione, Italy, taken with the FARO Laser Scanner Photon.

Digitising for the future

HERITAGE *Italian geomatics experts Gexcel Srl are pioneering complex laser scanning applications and services based on advanced capturing software with an evolving range of modules and features.*

Gexcel Srl is the company behind the powerful laser scan data processing software Reconstructor. Based in Brescia, Italy, Gexcel currently employs 10 people. Efforts are split evenly between the activities of software development and scanning work focussed on supporting users and developing new techniques.

Gexcel is continuing to push the limits of practical applications with the scanning of the entire historic Sirmione city centre, located at Lake Garda. Thanks to the FARO® Photon's speed and point density, an area of about 2km^2 was scanned from about 25 positions in a matter of hours. "We now have a highly detailed set of digital photos with in-depth information that can be used in many ways," said Gexcel's Head of Software Development, Matteo Sgrenzaroli. "The engineer can zoom in and access specific information immediately without having to send out a surveyor every time. But it is also possible to use the same data, for example, to promote tourism by creating an online version of the city." The new Reconstructor 2.6 version also allows you to link an external file to any point in the scan. So you could store 'before' and 'after' photos of restoration work or add a PDF with legal information about a building.

Gexcel's new Control Module was key to the efficiency in the Sirmione job. This new module was specifically developed to manage the FARO Laser Scanner and the digital camera. Thanks to this new Reconstructor module, the camera colour option can be improved by mapping the acquired images at full resolution to mesh models. This new module allows to combine the Photon's fast point acquisition with the possibility to map full resolution images from a digital camera without the long manual camera calibration.

Additional improvements were added to Reconstructor 2.6, which now works like a CAD system with the inclusion of a user coordinate system and meshes.

> "Everytime we are called out as consultants we discover another challenge that we can solve in the next update of Reconstructor."
>
> MATTEO SGRENZAROLI,
> HEAD OF SOFTWARE DEVELOPMENT

"We chose the FARO Laser Scanner as the preferred front-end to Reconstructor because of the precision, speed and field of view it offers," explains Matteo Sgrenzaroli. "Quality really matters for us, especially with our position as consultants and developers. With FARO, we have a good quality foundation and reliable partner with whom we can develop our software and services."

ABOUT GEXCEL SRL

Gexcel Srl was formed as a spin-off company from the University of Brescia in 2007 to commercially exploit the academic know-how and applied results from projects funded by the European Joint Research Council of Ispra. The company's vision is to turn geomatics expertise into excellent applications that allow innovative new services and boost efficiency in the areas of architectural, infrastructural and industrial surveys. Their clients include leading bodies such as the International Atomic Energy Agency as well as universities and research centres throughout the world.

@ WWW.GEXCEL.IT/EN
WWW.RECONSTRUCTOR.IT

ABOUT THE PARTNERSHIP WITH FARO

Matteo Sgrenzaroli of Gexcel says: Reconstructor is a perfect partner product for the FARO Laser Scanner because:

- Reconstructor's control was developed specially to support FARO Laser Scanners during acquisition.
- Reconstructor is packed with features that make big jobs more manageable through automation and linking of data sets: e.g. inclusion of navigation data.
- Little details make life easier: like Recipe Windows, which allows for a drag and drop process to calculate frequently used quantities such as areas or volumes.
- A user coordinate system (UCS) is included in Reconstructor. This enables users to set reference origins and organise the scan data in a CAD-friendly fashion within Reconstructor.

The FARO Laser Scanner Photon makes it possible to accurately scan large spaces indoors or outdoors in very little time.

@ WWW.FARO.COM/PHOTON

FOUR GOOD REASONS

The FARO® PowerGage, along with the FARO® Gage and Gage Plus, are the industry's first personal line of coordinate measuring machines.

1 Contact Measurement: Interchangeable probes mean the FARO Gage can be used to measure different geometries.

2 Ease of use: Universal hinges make it easy for the operator to move the Gage around all kinds of objects, minimising fatigue.

3 Volume of 1.2m: Small parts and moulds can be easily processed in the Gage's 1.2m (4ft) measuring volume.

4 Portability: The Gage is a portable device for jobs needed on different areas of the shop floor.

The FARO Gage is a compact, high-performance coordinate measuring machine that can be conveniently mounted in just about any area of the shop floor.

@ WWW.FARO.COM/GAGE

Mantec inspect brake hubs for the rail industry on the shop floor

Mantec is using the FARO Gage Plus within their machining facilities to inspect intricate components.

RAIL INDUSTRY *Mantec Engineering Ltd, based in Manchester, is firmly established in the CNC machining market and enjoy an enviable reputation as a supplier of precision components to a broad customer base across Europe.*

The company provides their machine operators with CMM measuring capability on the shop floor using the FARO Gage Plus to measure railway components.

Since starting to work with the FARO Gage Plus in November 2008, the company could not only speed up the measurement but also eliminate human errors associated with hand tools. They now also have the ability to create inspection reports in less time because they no longer have to put in the dimensions manually.

Quality Manager Nick Kidd explains that the main advantages of this personal CMM are its accuracy, portability, ease of use and the attractive cost/price ratio.

@ WWW.MANTEC.ORG.UK

Brinksway Tool save time and money using FARO Gage for inspection of aircraft parts

AEROSPACE *Brinksway Tool enjoys the flexibility of using the portable FARO Gage Plus in various departments and areas while reducing downtime due to on machine inspection.*

Brinksway Tool Limited (a company belonging to the Hyde Group) has been supplying bespoke tooling solutions to the aerospace, marine and automotive industries for over 25 years. Brinksway's engineering experience has gained much accreditation within the precision engineering industry and now offer a full 'turnkey' service utilising the state of the art equipment they have invested in.

The company based in Manchester enjoys the flexibility of using the portable FARO Gage Plus in various departments and areas while reducing downtime due to on-machine inspection. The system has been in use for 2 years now to inspect Aircraft tooling, jigs and fixtures for major manufacturing companies around the world.

Since they started to use FARO's portable measurement devices, they have saved both cost and time – especially by reducing downtime due to on machine inspection. They also appreciate the speed and ease of use of the FARO Gage in comparison to using a traditional fixed CMM.

Brinksway Tool use the FARO Gage Plus to inspect Aircraft tooling, jigs and fixtures.

Volkswagen: Time and cost savings with FARO systems

INTERVIEW *In our interview, Peter Wulf, Head of the Workshop Plant Engineering department at Volkswagen AG, talks about the decision to buy FARO Laser Tracker systems and about his vision of the future.*

Peter Wulf, Head of the Workshop Plant Engineering department at Volkswagen AG

WHICH TASKS ARE CARRIED OUT AT THE WORKSHOP PLANT ENGINEERING DEPARTMENT AT VOLKSWAGEN AG?

The workshop division builds body engineering plants for chassis, superstructures, side parts, doors, bonnets, boots and finishing plants, and supplies them to Volkswagen plants worldwide.

MOVING ON TO QUALITY – WHAT ROLE DOES THIS PLAY IN YOUR DEPARTMENT AND HOW IMPORTANT IS THE QUALITY OF YOUR WORK FOR THE FINAL PRODUCT, I.E. THE CAR?

Quality plays a very big role in plant engineering in general and at Volkswagen in particular. The equipment we produce must be of the highest quality, which we of course have to document using measurement logs. This is where the FARO Laser Tracker plays a key role. The results are reflected in the end product - the car. Narrowest clearances, smallest radii, clean lines. Simply Volkswagen – das Auto.

SOON AFTER THE IONS MARKET LAUNCH, YOU DECIDED TO PURCHASE FOUR FARO LASER TRACKER SYSTEMS. WHY?

Having successfully employed FARO Laser Trackers for many years, we picked FARO again for the new synchronous production concept. The ION came along at just the right time and meets the increased demands thanks to its greater precision. We needed a mobile measuring system that offers us a very high degree of precision, sophisticated, state-of-the art software and optimum operation.

WHAT EXACTLY IS SYNCHRONOUS PRODUCTION?

Synchronous production is a concept built upon four pillars: cycle, flow, pull and perfection. However, these principles can only be implemented if the necessary fundamentals, the basics, are introduced and lived in practice. They are flow-oriented production, the elimination of waste, a defined work organisation and standardisation. This is applied in plant engineering and lived out in practice.

WHAT STATUS DOES MOBILE MEASUREMENT TECHNOLOGY ENJOY AT THE VOLKSWAGEN GROUP AND WHAT ADVANTAGES DOES IT OFFER?

The aim and purpose of mobile measurement technology at Volkswagen is to achieve standardisation within the Group. This puts us in the position of being able to exchange staff and equipment throughout Europe at short notice. The status is very high because the quality standard is thus present at all locations and everybody is working under the same conditions.

HOW DO YOU PICTURE THE MEASUREMENT TECHNOLOGY OF THE FUTURE?

The system is calibrated via one point in the given equipment, collects the relevant data and autonomously measures all the points requiring measurement.

@ **WWW.VOLKSWAGEN.COM**

SUMMARY

The Plant Engineering department of the vehicle tool-making division at Volkswagen AG has been using FARO measuring systems since 2003.
What is particularly impressive about FARO equipment is its flexibility, precision, mobility, speed and reliability. The systems have helped to achieve significant time and cost savings as well as the standardisation of quality standards at Volkswagen plants. "Our equipment and our FARO measuring system form a self-contained unit," says Peter Wulf.

Photo: Volkswagen AG

The Plant Engineering department of the vehicle tool-making division of Volkswagen has been using four FARO Laser Tracker ION systems to calibrate and check production lines for VW body shops worldwide since October 2009.

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