Altracon:

Ralf Berres, CEO and Director R&D (left) and Dr. Dieter Barz, Director, Sales and Service

Machines and More

Luxembourg-based Altracon follows a well-defined path of technology innovation combined with creative ideas for developing tyre testing and tyre quality enhancement solutions. The company has achieved remarkable growth from delivering aircraft and jet engine testing equipment to total testing solutions for tyre makers

Altracon's new customer and training center

TA News Bureau

What makes Altracon, the Germany-based providers of equipment for tyre testing and tyre quality enhancement, different from others is in the way the company sees its role in the market. That goes beyond merely manufacturing machines for tyre makers. Altracon combines technology innovation with creative ideas and management consultancy to meet and exceed its customers' expectations and overcome the typical barriers between these business areas.

Take, for example, the retrofit service it offers. Altracon retrofits are independent from the make of the machine. "While various suppliers have disappeared from the market or don't offer any longer service, it is very well accepted that Altracon is taking over to care about these machines to keep them alive," Ralf Berres, CEO and Director R&D, told Tyre Asia. Also, the Altracon concept is the open market spare parts supply for years of operation. "During the conversion process we take the specific local situation of technology and spare parts into account. The hitherto costly OEM dependence regarding supply of service and spare parts delivery will be reduced to a minimum by the use of local availability and market standards."

A major part of Altracon's operation is R&D. More than 10 per cent of the turnover is yearly spent for R&D purposes to stay ahead of competition. Here also the company stands apart from others. Its R&D operations do not limit itself to responding what the tyre companies ask for. The system is more proactive. Altracon works on combining innovation and creative ideas. It develops new ideas for testing solutions and presents them to customers. This opens the way to jointly developing customised solutions, which can make huge difference to quality enhancement and cost-effectiveness.

Altracon operates with low vertical integration to keep flexibility when the order volume is varying. Machining of parts which are designed by Altracon is done by highly qualified suppliers mainly in the region, but is also supplied from all over Europe. The machines are "Made in Germany."

Testing at the multifunctional load deflection tester

The in-house machine workshop is used for R&D purposes, for the manufacturing of smaller parts and prototypes as well as for services to realise a short reaction time. The machines are assembled and set into operation in house, which is important to keep the know-how under control and ensure the quality of the entire system.

Long experience

Altracon has been a leading player in testing equipment market for over 30 years, sustaining its focus on uncompromising quality and unmatchable service. Based in Echternach, Luxembourg, it began as a pioneer in delivering aircraft and jet engine testing equipment under the name of Komtron, the company founded by Ralf Berres. It supplied testing and technology solutions, mainly to the US Air Force. The growth was steady and the range of products widened. In 2009 Altracon was established by combining the R&D competency of Komtron and companies owned by third parties for machine building and sales.

As a public limited company Altracon S.A. holds smaller group companies, including Altracon Consulting S.a.r.l., an intellectual property consulting company in Luxembourg; and ATS Device GmbH, a machine building company. Altracon operates sales offices in India and China and is currently expanding to South East Asia, South Korea and the US.

Dr. Dieter Barz joined the Executive Board of Altracon as Director Sales and Service in 2015. Dr. Barz has immense knowledge and experience in tyre machinery and tyre testing based on his previous positions in leading tyre companies such as Continental/ Conti Machinery and Goodyear as well as from measuring system supplier Kistler.

Customer relation

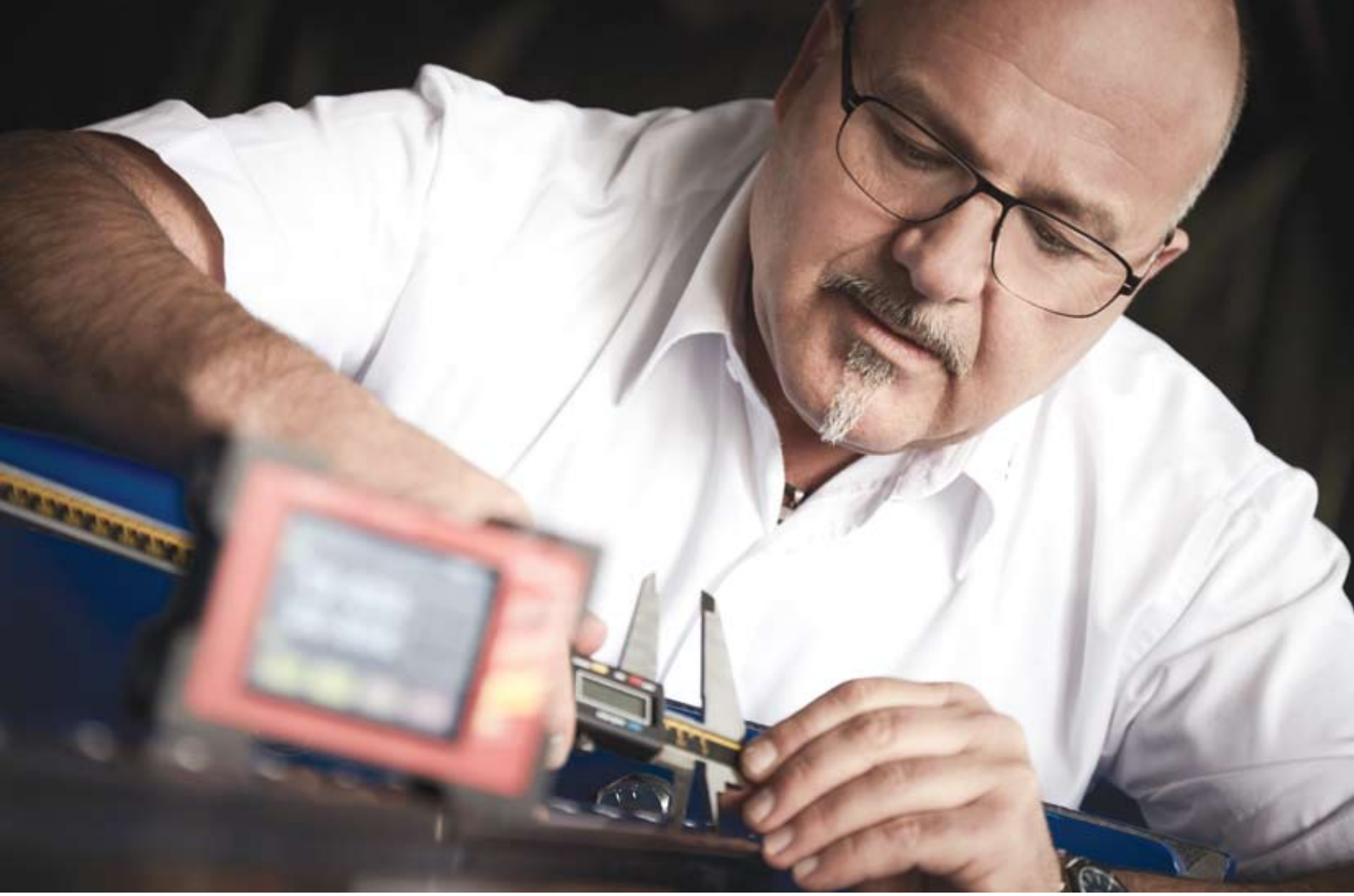
Customer relation is the key to Altracon's business success, says Berres. "It is built on trust and requires confidence in our technology and personnel which is doing the project management and the technical consultancy in this special field of elastomer and tyre testing." The newly opened customer and training center in Germany shows how seriously the company sees this side of its operations. The center is linked to the work field and supplements to the head office in Luxembourg, with its administrative environment.

The center hosts trainings, workshops, seminars and project meetings. It offers all the comfort customers can expect to be efficiently trained with most modern equipment to learn about technology and testing equipment.

"It shows Altracon's character to be an innovative engineering company and high quality machine builder. Hands-on training is here not only a philosophy, it is reality," Berres says proudly.

Retrofit technology

High pressure tire cutting



Ralf Berres, CEO and Director R&D

Top contact for testing solutions

From the days when it offered aircraft and jet engine testing solutions, mainly to the US Air Force, under the name of Komtron, to the current status as leading providers of equipment for tyre R&D, especially testing of quality of tyres, Altracon has been ardently focusing on technology development. Quality improvement in tyre industry does not only mean quality of tyres, but it also stands for quality of testing and the development process, says Ralf Berres, Altracon's CEO and R&D Director

How significant is Altracon's contribution to quality improvement in tyre industry?

We are a pioneer in the field of quality testing for tyres and actively contributing with technology development in this field since more than 30 years. Our roots come from aircraft and jet engine testing. We supplied testing and technology solutions in this field in early times of the company mainly to the US Air Force under the name of the Germany-based Komtron that I owned. Tyre and elastomer testing technology was then supplemented step by step during the years, exploiting the experiences in the field of high dynamic measurement solutions and the development of suitable testing equipment, and has meanwhile completely superseded it.

Altracon itself was founded in 2009, bundling together the competencies of Komtron, which held the R&D competency, as well as companies owned by third parties for machine building and sales.

Altracon makes a big contribution to quality improvement in tyre industries.

The high quality standards from aircraft and jet engine testing are thereby still embossing our understanding of quality which is reflected

in the reliability and the accuracy of the offered equipment.

Today the main part of our product portfolio is focusing on equipment for tyre R&D, especially testing of quality of tyres, including the measurement of tyre characteristics such as wear, rolling resistance, endurance, high speed uniformity or other standardised tests, as well as the measurement of elastomer material properties or the preparation of tyre sections for visual analysis.

While there are various suppliers for tyre testing equipment and drum tyre test stands at the market Altracon characterises by being an innovation centre with a significant part of new customised solutions to better understand the tyre and its behaviour. Altracon is the first contact to discuss the feasibility and to develop technical solutions to test or measure something new independent if it is in the lab, on the road or test track. Therefore we are even taking influence on the development of the quality testing itself.

Quality improvement in tyre industry does not only mean quality of tyres. It also stands for quality of testing and the development process.

What are Altracon's challenges in the area of tyre testing machine manufacturing?

Altracon develops testing technology for tyre makers and the performance of the tyres is significantly improved with the machines and test-methods developed by us. It is obvious that tyre test stands which are requested by the R&D Centres for the industry combine more and more functionality. With this it gets technically more and more demanding. The development of tyres for global sales requires the consideration of the various international standards and these often should be performed at only one test stand. This goes along with the trend to larger tyres and often results in a balancing act to combine precise measurement equipment for small and big tyres to prevent the purchase of multiple machines. However, this is not always possible.

As new quality improvement norms come into play in tyre industry, how is Altracon benefiting from it?

Altracon is prepared with the company set-up that testing solutions and configurations may be developed which do not yet exist. We are specialised in machine technology and have major experience in tyre testing.

We are associate partner for the standardisation committees for testing in our fields of competency. Based on the involvement in R&D and parent bodies Altracon has the advantage to be early involved in the development of new testing standards.

Your's is a highly technology-intensive operation. How big is the role of Altracon's R&D set-up?

Tire endurance testing machine

The R&D department is the heart of Altracon. More than 10 per cent of the turnover is yearly spent for R&D, besides project related developments to stay ahead of competition. An own R&D department is something unique at a machine supplier and underlines the innovation and technology entitlement of the company.

Different from other machine manufacturers Altracon does not only react on requests from tyre industry. We come up with new developed ideas for testing solutions to attract our customers. These are base for discussion and initialise to jointly develop a customised solution which often ends up in a new testing standard.

Extremely fast hydraulic and electrical system solutions, which are mainly used in the field of elastomer property testing and get increasingly important for tyre test stands as well, are one of my special fields of interest.

What are the features of Altracon's innovative products?

High dynamic Indoor Footprint Analysis Track (IFA-Track):

The high dynamic Indoor Footprint Analysis Track (IFA-Track) combines the experience and expertise of Altracon in dynamic measurement technology, image analysis competency and design of tyre test stands in only one field: Indoor measuring systems for dynamic footprint analysis.

The rolling wheel/ tyre moves on a rigid flat surface of a machine bed over a crystal clear safety glass panel. Together with a high-speed video camera it is thus possible to take footprint pictures and videos of the tyre for later analysis during it passes over. The contact patch is visualised by a specially developed integrated light system consisting of white- and UV- lights.

The footprint can be analysed for format and size, tread and tread-block deformation, hill and valley, pressure distribution under dry and wet conditions etc.

The machine moves outdoor testing into the laboratory. It differs from conventional machines through the multifunctional set-up. Standard machines move the wheel carrier over the plate. This is only suitable for slow speeds due to the large mass of the wheel carrier and the equipment that has to be travelled. The high dynamic IFA-Track allows additionally to move a sledge with the integrated camera system underneath the stationary wheel. This significantly reduces the mass in motion and allows fast acceleration going up to measuring speeds of 40m/s for measurements under dry condition depending on the acceleration travelling distance.

The wheel can be accelerated and decelerated in order to measure the dynamic effects of block deformation in radial direction. The wheel load is precisely applied through a hydraulic linear axle. The spindle unit can be adjusted for camber and toeing relative to the centre of the tyre.

This machine combines multiple functionality and moves the test track into the laboratory. It sets new standards in R&D equipment for the tyre industry with its unique measurement capabilities and allows to run test under fully controlled conditions which were reserved for road testing up to now if at all feasible.

High Speed Linear Friction Tester (HSLFT):

A major field of expertise from Altracon is material property testing. Extreme fast processes have to be controlled and measured – a specialty of us. A core product is the High Speed Linear Friction Tester HSLFT, which was just launched

High dynamic oscillation tester

in its third generation beginning of the year.

The HSLFT offers a unique possibility to determine friction coefficients of rubber samples on different surfaces and under various operating conditions in order to predict compound and pattern influences on the grip and traction performance of tyres.

The testing machine was designed and constructed in such a way that all relevant tire testing conditions can be simulated with this equipment. A novel, merely for this project developed linear induction motor enables sliding velocities up to 8 m/s and generates accelerations up to 100 m/s^2. Conditions can be applied to cover the full operating range of passenger car and truck tyres.

Testing surfaces like asphalt and concrete are used, as well as snow and ice surfaces with comparable characteristics to the outdoors. Even the simulation of wet track and aquaplaning conditions is possible. To test on snow and ice surfaces, or to simulate different temperature zones with high or low humidity, the entire system needs to be installed in a controllable climate chamber enabling a temperature range from -20°C (-4°F) to +40°C (104°F). The track condition and consistency is an important factor to get constant and repeatable results.

Systems in operation in laboratories at various tyre manufacturers proof that the testing capacity in manual mode (one shift) is up to 150 tests per day. A fully automated linear friction tester even allows unattended 3-shift operation.

Friction testing with the HSLFT is a huge step forward in the process of tyre development proven by customer feedback. It reduces risk by increasing the number of test cycles, offers the customer a far shorter delay of launching the product by reducing the number of road tests and cuts development costs by creating an indoor all-season tyre test environment.

High Dynamic Oscillation Tester (HDOT), a biaxial transient tread oscillation machine:

The latest development in the field of elastomer property testing is the HDOT, a system to measure the transient response of tread-rubbers on different friction/ road surfaces. It is based on the customers experience with the HSLFT and advanced customer needs.

Geometrically standardised rubber samples are activated with high frequency in various loading conditions, bi-axial in longitudinal and vertical direction. Road surfaces and samples are replaceable and free to configure and may be conditioned with various temperatures.

This machine opens complete new opportunities

to describe the material properties of elastomers. It perfectly supplements the capabilities of the HSLFT for dynamic measurements in higher frequency ranges with unique hydraulic equipment developed by Altracon.

Retrofit is another area of excellence for Altracon. Why is this business from interest?

Altracon delivers customised solutions and modification of test and measurement systems. Besides the upgrade of the mechanical set-up our globally offered retrofit service includes electric-, hydraulic replacement and the integration of latest measurement technology.

Retrofit generally stands for modernisation or expansion of existing machines with the clear objective of improving their quality or efficiency, or simply adapts them to state-of-the-art standards to ensure availability of wear and spare parts.

The modernisation of the system delivers various advantages to the operator. Most visible a modern HMI with GUI and ergonomic workplace, most important an increase in productivity at a significantly lower cost compared to a new relevant equipment.

With over 25 year of experience in the field of industrial machinery retrofit, Altracon has focused on the modernisation of testing systems in the automotive and especially tyre industry.

To compete with OEM solutions, who often argue that repair or modernisation is inefficient for the customer compared to new machinery, Altracon has specially developed individual retrofit concepts.

These concepts allow to perform an upgrade of the entire system and the components on the premises of the customer. Because it is not required to dismantle and reassemble the machinery not only the cost but especially the standstill times are minimised.

With the latest measurement and control technology and the optimisation of both process and system, Altracon ensures that quality, performance and compliance with the latest technical standards for product testing are guaranteed.

The conversion of the high quality mechanical engineering of older machines in combination with the latest measurement, control and drive technology results in an excellent performance.

Numerous retrofit projects proof that retrofitted systems often show better and more continuous long-term results than comparable newer machines. The customer gets a machine which is “as good as new” for a relative low invest.

It is in particular from interest for the customers, that the offered retrofit services are independent from the make of the machine. While various suppliers disappeared from the market or don’t

High speed linear friction testing with HSLFT

offer any longer service it is very well accepted that Altracon is taking over to care about these machines to keep them alive.

Another advantage of the Altracon concept is the open market spare parts supply for the upcoming years of operation. During the conversion process we take the specific local situation of technology and spare parts into account. The hitherto costly OEM dependence regarding supply of service and spare parts delivery will be reduced to a minimum by the use of local availability and market standards.

A wide range of services with remote maintenance and the integration of the customer's own service personnel, delivers a comprehensive and customer oriented solution.

More than one hundred projects around the globe and highly satisfied customers are proof to our message: "Second Life – Retrofit"

What are the features of Altracon's new Customer- and Training-Center?

Customer relation is the key to our business. It is built on trust and requires confidence in our technology and personnel which is doing the project management and the technical consultancy in this special field of elastomer and tyre testing. We open the doors for our customers to visualise our manufacturing process to convey our quality understanding and to learn about our products and how to handle them to achieve best testing results.

Altracon very recently inaugurated their new customer and training center in Germany. It is physically linked to the work field where the

Retrofit process

Production process

machines are built and taken into operation and is with this a perfect supplementation to the head office in Luxembourg, with its administrative environment, that also hosts the sales department.

"The customers are King" and the new environment allows to treat them accordingly, to host trainings, workshops, seminars and project meetings or to proceed the acceptance tests for their new test stands.

The customer and training center offers all the comfort customers can expect to be efficiently trained with most modern equipment to learn about our technology or testing equipment. It shows Altracon's character to be an innovative engineering company and high quality machine builder. Hands-on training is here not only a philosophy, it is reality.

How do you see the scope of tyre testing solutions in future?

Based on the close cooperation in the field of R&D with our partners from tire industry it gets visible, that test machines and –procedures are still in use, which were developed in the 50's and the 60's.

Under actual point of view and state of the art of the process- and measurement-technology Altracon sees a substantial development potential.

What are Altracon's future expansion plans?

The new customer and training center will from now on bundle the customer relations activities of the Altracon group in Germany and offers the in-house capabilities to intensify the customer services. The work-space in the new building has extended capability to install test stands and let the customer participate in their set-up phase.

The new environment offers to extend the product portfolio by the subject areas maintenance-training and seminars with regards to their machines as well as general test stand and measuring technology. This will underline the consultancy role of Altracon, which they already gave proof of acting as an associate partner for the standardization committees for testing.

After Altracon strengthened its representation in Asia with agents located in India, and just recently in China, to establish business in the local markets and the next steps are prepared to set-up offices in South East Asia, Korea but also in USA. This will round-up the global representation.