ETEL

ASSISTS IN SOLAR IMPULSE 2 FLIGHT AROUND THE GLOBE

Recently the Solar Impulse 2 airplane finished its flight around the globe, with airtime lasting over 500 hours and is the first plane to do so relying entirely on Solar Energy. With an ETEL motor inside, the Solar Impulse 2 successfully started in Abu Dhabi and flew across Asia, the Pacific Ocean, the United States, Atlantic Ocean, and Europe before heading right back where it started. This is a remarkable achievement, not just in the industry of aviation but for the idea of clean energy as a technological driving force.

The Solar Impulse 2 airplane was designed to have optimum performance-per-weight ratio so every component, down to the smallest of screws was made to be as light as possible. The task of contributing a proper motor that met these demands was a goal ETEL was more than able to achieve. A number of years ago ETEL was asked to contribute its expertise in direct drive technology to create a motor capable of an efficiency above 95 percent which proved vital in ensuring the solar power absorbed by the panels was made the most out of. ETEL proved to be the supplier that was able to provide the highest quality motor and that expertise continues to be incorporated into their own standard product line of direct drive motors and motion stages.

Photo courtesy of Solar Impulse | Revillard | Rezo.ch

Through a partnership with many vendors, the Solar Impulse 2 team was able to achieve their goals and ETEL is proud to be a part of this accomplishment. In the end, the airplane proved to successfully combine the most advanced scientific knowledge in terms of aeronautics, materials, photovoltaic energy and electrical motors.

The ETEL motor used in the Solar Impulse 2 airplane is a torque motor characterized by having an optimized force density and unmatched current efficiency. It is based on the same technology as the parts every ETEL customer receives. The motor in the Solar Impulse 2 is obviously slightly modified to support the extreme environmental conditions that are unique to this challenge, but the heart of the motor and its magnetic technology is currently ensuring the proper operation of thousands of machines around the world.

CTI Shanghai

SET TO CONTINUE DISCUSSION ON DEDICATED HYBRID TRANSMISSIONS

Stricter legislation and more environmental awareness among drivers, including those in China, are causing a radical rethink in the automobile industry; all the experts agree that hybrid drives will become more important. A new transmission category is particularly outstanding: Dedicated Hybrid Transmissions (DHTs), which are developed specifically for use in hybrid drives.

A DHT is a hybrid transmission that performs key transmission functions (such as matching the ICE's rpm and torque to vehicle operating conditions) with the assistance of an electric motor. So in a DHT, electric motor components handle essential tasks, and are 'baked in' to the concept. "This distinguishes DHTs fundamentally from add-on solutions, and follows the current way of thinking. "It doesn't matter whether legislation or driving enjoyment is the stimulus," says Mario Brunner, head of passenger car transmission, AVL List GmbH. "Either way, there is no doubt that electrification will significantly change the future of drive technology. Most of today's hybrid drives use conventional transmissions with add-on hybrid solutions, but that means extra costs. For an optimal balance of functionality and cost, we need dedicated solutions instead."

However, the efficiency of traditional transmission concepts is also being improved. "Audi is currently launching a new, sustainable S-tronic generation of its all-wheel drive system," reveals Michael Schöffmann, head of transmission development, Audi AG. "It still has all the typical Quattro characteristics, but is much more efficient." Efficiency is an issue all through drive development work, and DHTs score high marks in this respect.

Three advantages stand out when discussing DHTs. Firstly, DHTs can be designed to be far more compact and efficient. Unlike conventional automatic shifts, for example, where gear step numbers are progressively increasing, DHTs can actually reduce the gear step count. Secondly, DHTs support very economical, eco-friendly driving because the electric motor's support enables the ICE to stay within its optimal performance window. Thirdly, the extra power from the electric motor can be used to tangibly boost two factors that

are key for the acceptance of hybrid automobiles: driving dynamics and enjoyment. Hybrid drive automobiles are still a rarity, but a turnaround is in sight.

"On the one hand, there is growing pressure to factor in environmental protection more strongly; on the other, there are stricter emission rules. These have advanced the development of energy-saving drive technologies in the world as a whole, as well as in China," explains Hanbing Yang, president automotive of the Schaeffler Group Greater China.

China in particular is seen as a pioneer of electric mobility. "In the last decade, the world changed the Chinese automobile market. In the next decade, China will assume leadership in the automobile world. So 'Developed for China' means 'Developed for the world' too," says Prof. Dr. Frank Zhao, director of Tsinghua Automotive Strategy Research Institute (TASRI), Tsinghua University. The ambitious targets of the Chinese central government confirm that assessment: the plan is to put around 5 million electric automobiles on the road by 2020.

The first time people presented and discussed DHTs for a broad specialist audience was at the 14th International CTI Symposium Berlin in early December 2015; the initiative came from Prof. Dr.-Ing. Ferit Küçükay, the Symposium chairman, and Dr. Robert Fischer (AVL and member of the advisory board). Since then, this born-in-Berlin acronym has been widely adopted by specialists, and the industry eagerly awaits the next International CTI Symposium 'Automotive Transmissions, Hybrid & Electric Drives". From September 21-23 2016, an estimated 500 experts will meet up in Shanghai to continue their discussion of DHT, as well as other topics.

The International CTI Symposium is a meeting place for experts from around the world who wish to discover and discuss the latest technologies and developments in automobile transmissions and alternative drives. The Symposium presents the people who drive the transmissions market, and indicates technically and financially interesting developments. Apart from the development of DHT, topics for Expert Talks in Shanghai will also include cost reduction potential, higher efficiency and comfort optimization, CO_2 emission reductions, integration, connectivity and the influence of automated driving on transmissions.

Baldor

NAMES WAITE MOTOR PRODUCT MANAGEMENT DIRECTOR

Baldor Electric Co. recently named Ryan Waite director of motor product management for its global NEMA motor business. Waite is responsible for the rapid global growth of Baldor•Reliance motors sales as well as implementing the strategic vision for the business. Waite joined Baldor in 1990 and has experience in operations, engineering and

customer service. His previous positions have included manufacturing engineering manager, plant manager, director of Lean Flex-Flow, and most recently, director of manufacturing. Waite has a bachelor's degree in mechanical engineering from Southern Illinois University. He will be located in Fort Smith, Arkansas.

ICP

SPEAKS TO NACD MEMBERS ON TODAY'S HIRING AND RECRUITING CHALLENGES

Responding to a request from the National Association of Chemical Distributors (NACD) to help member companies with their hiring challenges, Industrial Careers Pathway (ICP) arranged for retired industrial manufacturing executive Terry Knight to make a presentation to an NACD leadership meeting in Philadelphia, Pa., recently. Knight, who served as chair of the ICP Steering Committee for five years until January 2016, has been actively involved with ICP since its inception in 2002 as a leading advocate and contributor.

Knight spoke to about 30 executives from the chemical distribution industry about ICP resources to help with the challenge of recruiting, hiring and managing employees from generations Y and Z, and successfully engaging five generations in the workplace. Surveys of industrial distribution executives consistently show that filling open positions and managing younger employees continue to occupy a top trouble spot. ICP, having been at this issue's forefront for the past decade, is a go-to resource for insights and solutions.

Knight said, "The opportunity to speak to this highly professional level of chemical distribution industry leaders was very valuable and worthwhile. The excitement in the room regarding the programs ICP offers was real."

Of specific interest to the group was the introduction of a new program, dubbed Team ID, which is aimed at raising awareness of and attracting entry-level employees to careers in industrial distribution. The program consists of an online "personality" quiz for job seekers to discover how their own personality will match up with a specific entry-level career path in the field: inside or outside sales, customer service or warehouse work. In addition to the quiz, videos illustrate the process of these jobs, with Team ID "superheroes" swooping in to save the day with on-time, helpful and accurate problem solving as industrial distribution workers. Job seekers are then linked to the ICP website to learn more and to the ICP Job Board, the only online job board specifically focused on industrial distribution careers, to apply for posted jobs.

Access to the resources available for distributor companies (many for no charge or at very low cost) is at the website below. These resources include free "How-To-Guides" for everything from starting an internship to organizing a company tour for the community.

Any company belonging to one of the nine supporting Alliance Partner organizations, of which NACD is one, can take advantage of these free resources and receive discounted rates when posting open positions to the aforementioned job board. Member companies are highly encouraged to urge employees to register as volunteer ICP Ambassadors in order to help ICP spread the word about industrial distribution in their local communities. Many opportunities identified by ICP, such as classroom presentations and career fair appearances, are awaiting volunteers for 2016.

Smart Automation Group

BRINGS TOGETHER CUSTOM AUTOMATED EQUIPMENT MANUFACTURERS

The world's leading suppliers of custom automated manufacturing equipment recently launched the Smart Automation Group, a collaborative partnership designed to disrupt the custom automation services industry.

This unique partnership — which includes Eclipse Automation, Insys Industriesysteme AG, Transmoduls Ltd, SMZ Wickel-und Montagetechnik AG, JULI Technology, and ITE Automation — are joining together to share best practices, industry IP, experience, and know-how to provide customers with automation solutions in a way unlike anything on the market today.

Thanks to the collective expertise of its member companies, Smart Automation Group will be able to produce technologies that are the lynchpins of manufacturing processes across every industry, including automotive, consumer, health sciences, nuclear, electronics, energy, and industrial, to help clients grow today, and build for tomorrow.

"Our vision is to collectively disrupt the traditional way of providing custom automation services, putting the customer at the core of everything we do," said Steve Mai, president of Eclipse Automation. "Smart Automation Group's collaborative approach means we can automate any manufacturing process, and that through a commitment to quality, and operational excellence, there is no challenge we can't solve for our clients, no matter where they are in the world."

As part of this new joint venture, each partner is taking a team-oriented approach, significantly increasing the overall capabilities that enhance automation solutions for clients. Each company will review its own client requests, but if a

particular project requires additional capabilities, the collaborative project team can be tapped to bring the best value to the table.

All of this seamlessly takes place in the background, ensuring the client maintains a single point of contact. The result: enhanced value of all automation solutions for customers.

In any given case, one of Smart Automation Group's partners could be called on to contribute with its global reach, intellectual property, employee know-how, resources, or relationships, all with the sole goal of providing value-added solutions to each project scope.

With offices in Canada, the United States, Hungary, Switzerland, and China, Smart Automation Group works with strategic partners in every region of the world, to provide unique, cost-effective, and scalable solutions through collaboration and shared innovation, with a global support network.

Kollmorgen

RELEASES AUTOMATION AND MOTION CONTROL CATALOG

Kollmorgen's new Automation and Motion Control catalog details the features, benefits and specifications of the company's complete range of motion control solutions, including: Direct Drive motors, servo motors and drives, Safe Motion, distributed and central servo amplifiers and the complete Kollmorgen Automation Suite. The catalog also includes stepper motors and drives, PMDC motors, linear actuators and planetary gearboxes.

More than 100 diverse and scalable product and solution ideas are covered in the catalog, making it much more than a simple guide for selecting individual products used in next-generation machine design. The Kollmorgen catalog helps OEM engineers find the highest performance control and drive combinations for their machines. High-performance motion differentiates machines, enhancing energy efficiency and accuracy and reliability, which delivers a marketplace advantage and improves Overall Equipment Effectiveness (OEE) for OEMs and their customers.

The new catalog is now available in two easy-to-use formats, a downloadable PDF and an interactive, easy-to-navigate, digital catalog for online browsing.

Comet Solutions and Romax Technology

ANNOUNCE DISTRIBUTION AGREEMENT

Comet Solutions, Inc., a leading provider of simulation automation technology, recently announced a new distribution agreement with Romax Technology, a U.K.-based global leader in analytical solutions for transmission, axle and driveline systems. This partnership combines Comet's automation platform, which enables organizations to quickly build integrated, robust, multi-tool simulation automation templates (combining CAD, FEA, Romax and other tools), with Romax's software and award-winning engineering team's expertise in developing optimized driveline and gearbox systems.

For over 25 years, *RomaxDESIGNER* (Romax's flagship simulation program) has enabled users to quickly and accurately perform detailed analyses of critical performance attributes for improvements in durability, efficiency and dynamics, including advanced features such as consideration of manufacturing variation and planetary sideband analysis.

Comet provides simulation automation and standardization processes by integrating the variety of tools used by gearbox/transmission product engineers, including CAD, finite element meshers, *RomaxDESIGNER*, structural analysis tools, fatigue life tools, packaging/tolerancing tools, and other detailed gear design tools. By integrating data and tools within a single automation environment that includes optimization capabilities, Comet enhances the system analysis aspects of *RomaxDESIGNER*, providing product engineers with the capability to explore the complex interactions between flexible structural components, such as housings and planetary carriers, and the resulting gear, bearing and overall system performance.

"Romax is widely recognized as a leading global provider of integrated software and services for gearbox, bearings and driveline systems. We are extremely pleased to continue building on the development partnership we started last year," said Steve Brown, vice president global sales at Comet Solutions. "Comet further extends the capabilities of *RomaxDESIGNER*, creating an integrated and automated design and analysis environment.»

"Romax and Comet have extended their development partnership, with Romax now securing the rights to supply Comet SimApps to its customers. Our customers want to see the whole stack working, and this new arrangement enables Romax and Comet to work together as closely as needed during an engagement for the design automation flow to be fully captured and validated," said Dan Poon, head of partners at Romax Technology.