It is not totally unusual that technologies developed for industrial applications find their way into completely different areas of endeavour. It is, however, relatively rare for ABB to supply the medical field with advanced measurements. But in the hunt for the devious bacterium, *Helicobacter pylori*, ABB's infrared photometer has simplified the discovery of its existence in the human body.

This is an excellent example of identifying opportunities in new areas while applying the standard product portfolio of ABB. *Ingenuity at large* is the issue that gives this creative drive a stage upon which its performance can be shown to a larger audience through a number of case studies.



# Ingenuity at large

When we speak of ingenuity at large, we refer to the engineering talents the ABB Group has developed over the years in our local engineering centers around the world. These experienced and competent engineers are the ones delivering our projects to our customers. They adapt our standard product portfolio, which provides customer advantages in terms of quality, cost and global services, to match the requirements of each individual project. They add particular knowledge related to the local market and to the application itself, primarily in our key traditional industrial and utility markets. Creativity and ingenuity are required to meet the customer's needs, while delivering on schedule and within budget. Challenging as this is in itself, our engineers have sometimes to tackle projects with an additional dimension. These projects originate in unusual applications for which ABB's standard products are suitable if cleverly adapted. In this issue of ABB Review, we portray in both short and long stories, an excerpt of such unusual projects from many different application areas.

Mission-critical systems from ABB support the launching of satellites from a launch pad located in the Pacific Ocean. Engineers from ABB participate in each launch opportunity.

Medical applications are not a segment in which ABB is involved in very often. However, the company has delivered some projects to this market. ABB Review writes about industrial robots exercising limbs as part of therapeutical work with patients. Spectral analysis is used to detect pathogenic bacteria that have a talent for hiding in the lining of the stomach wall.

Gas spectroscopy is also effectively used for environmental purposes for example to look at the quality of air and its constituents. Applications such as gas blending are somewhat more mainstream. A few brief articles towards the end of this issue describe the benefits of spectral analysis in a variety of such projects. The underlying technology of Imaging Fourier Analysis and the interferometer is explained in some detail in the same section.

In a block of short stories we cover such diverse applications as an automatic olive oil press, more energy-efficient rides in a Blackpool amusement park and filtering techniques for artificial snow cannons.

In a section on energy applications, we describe ABB's involvement in a large delivery to the world's second largest dam in Venezuela, combined heat and power on a beach in north-western Poland, LNG production and how London is benefiting from a new underground cable. Many approaches to capturing the energy in tidal- and ocean waves are being pursued around the world. We have chosen to exemplify this technology with a wave power project underway in Norway.

The G8 meeting in Gleneagles, Scotland in July 2005 proclaimed that energy efficiency in industry, building, households and transportation is paramount to decreasing oil dependency and $CO_2$ emission. In *ABB Review* 3/2005, ABB's ability to contribute towards a sustainable future was discussed in great detail. In this issue we give a few examples from our involvement with the transportation sector, starting with describing how the energy efficiency aspects of our Azipod technology with contra-rotating propulsion presented a Japanese Ferry company with new business opportunities. Also in this segment are articles about new technology for trains, a huge project to equip Rotterdam's harbor with modern crane technology, and a more unusual project in Canada, describing a solution for hoisting boats over land from one body of water to another.

And finally, those who might believe that today's newspaper is in decline because of the dominance of the electronic media should read the story related to ABB's printing automation systems. The partial customization of newspaper content for local markets without sacrificing volume is creating a networked production that keeps volumes high. Automation has become an essential part in handling the increasing complexity. The conclusion drawn is that a locally customized newspaper will keep arriving on your breakfast table for many years to come.

*Ingenuity at large* celebrates our engineers around the world through a plethora of interesting articles for your perusal.

Enjoy your reading

Peter Terwiesch
Chief Technology Officer
ABB Ltd.