Ford uses an interior robot named Ruth at its plant in Germany.

Ford Robot 'Ruth' Uses 'Kid Gloves' in Car Interiors

AACHEN, Germany – When it comes to the art and science of designing a functional and inviting vehicle interior, Ford has a secret weapon – a robot with a human touch.

The Robotized Unit for Tactility and Haptics, or Ruth, is a machine designed by Ford that combines a computer's eye for detail with human perceptions of quality through touch and feel.

Engineers at Ford's European Research Centre in Aachen, Germany, employ Ruth to fine-tune vehicle interiors – from the feel and operation of switches to the texture and consistency of materials.

Ford engineers have recently been using Ruth to help design the optimal steering wheel by comparing the robot's measurements with detailed market research into customer perceptions of quality, such as the softness of leather and foam combinations.

Ford engineers have been using Ruth's ability to measure temperature and roughness in fine detail to develop steering wheel controls for the new Ford Focus that have the same high-quality metallic feel as those from luxury models.

Ford engineers "teach" Ruth which qualities feel good to human hands by linking the human perception to the robot's detailed measurements.

By referring back to the data, Ruth can then predict whether new components will appeal to Ford customers. Ruth's detailed and consistent approach supports the subjective analysis of Ford's human quality experts.

"We analysed the results of a customer clinic on steering wheels and compared them to the readings Ruth had given us," says Mark Spingler, Ford technical expert, vehicle interior technologies.

"Normally we would say above 80 per cent is a correlation that is statistically significant, but Ruth's readings on which steering wheels were most appealing to customers were 92 per cent accurate, which is really outstanding."

In order to ensure the most precise recreation of a person's sense of touch, Ford's engineers have developed special attachments for Ruth, such as robotic fingers that accurately simulate how a human perceives friction and roughness.

"When measuring friction the challenge was to model human skin, so we developed a friction finger with an underlay to monitor the feel of softness and the friction of the surface," Spingler adds.

Ford engineers also have equipped Ruth with a new tool to measure surface temperature and determine how that temperature will be perceived by human hands.

"Different materials such as wood, plastic or metal can have the same temperature but a completely different feel, and until we had developed the special tool for use by Ruth, there was no method for measuring this," Spingler says.

Although Ruth has the ability to process the sense of touch much like a human, the robot bears little resemblance to Ford's European Research Centre's more traditional engineers.

The compact robotic arm is equipped with flexible joints that allow it to position the various tools and "fingers" that can be attached to its head in the most realistic manner.

This allows Ruth to touch objects just like a Ford customer, and take highly accurate readings.

Ruth's most high profile work to date has been in switch touch and feel, measuring aspects such as friction, wobble, elasticity, stiffness, stickiness, roughness and surface temperature.

"Perceptions of quality can be based on the materials used and the efforts and craftsmanship customers feel have gone into the product," Spingler adds.

"We can only methodically improve what we can measure in a robust and reliable manner and Ruth allows us to do what was previously impossible; measure a human-based evaluation."

Ford SYNC Gives Voice to Car Interior As Commands Replace Knobs, Buttons

DEARBORN – Ford Motor Company designers believe less can be more.

Using the Ford SYNC in-car communications system as an interior design differentiator, the company is moving to reduce manual controls by increasingly replacing them with voice commands.

Part of the solution for today's automotive designs can be found in insights taken from other industries, says Scott Strong, Ford global director of Interior Design and a participant today at Ward's Auto Interiors Conference in Dearborn, Mich. Strong advocates providing more with less.

"Modern architects and designers employed this minimalism aesthetic of arranging the numerous components of a building or piece of furniture to create an impression of extreme simplicity," says Strong.

"We're seeing a renewal of that philosophy but with a 21st-century twist – inspired not by the machine age, but by technological revolution and a virtual world of artificial intelligence led by companies such as Ford."

Now, Strong says, that philosophy has come to vehicle interiors.

The world at our fingertips The enhanced in-vehicle connectivity options available today means automotive designers must tread carefully.

Today's designers have the world at their fingertips, and consumers who want it all – and less, Strong says. People want more comfort, more safety, more connectivity and more functionality. But they also want less cost, less complexity, less anonymity.

Technology and design innovation has provided a steppingstone to change. For instance, the hardware of the six-disc CD changer, at one time a must-have for audiophiles, no longer takes up space in the interior or trunk, and yet Ford has found more ways to bring music into the cabin, including via USB, SD card, Bluetooth streaming audio and satellite radio – all of which can be accessed by voice command.

Navigation hard drives are also a thing of the past in Ford vehicles. Using the simple SD card to store navigation data rather than a hard drive installed in the dash, Ford has been able to convert that space into practical storage while again giving consumers voice command for directions and other travel information.

"Think of the smartphone and its extreme functionality," Strong said. "Its individual components could fill a library, yet this compact little gem is a perfect example of the 21st-century philosophy of less is more.

"The technology attracts you – it doesn't overwhelm," he explained. "That's how we are designing future interiors around SYNC."

SYNC, launched in the fall of 2007, has since been installed on more than 3 million cars, trucks and crossovers and the available features continue to increase, from 911 Assist™ to Vehicle Health Report to AppLink.

"We've added features to SYNC that people want," Strong said. "You have the power of voice commands, you have the power of all these apps, and they're all packaged in a little software chip that resides behind a clean, efficient touch screen interface in our vehicles."

Strong says that ultimately the challenge for 21st-century automotive interior designers is to envision their customers within the context of a new, rapidly emerging world, and then to determine and deliver what is meaningful to them.

"The intent behind less is more is simply about getting to the essence of what is really important, and then expressing it with seductive simplicity," Strong said. "It's about quality of life – about achieving more with less."

Ford SYNC has been in the news quite a bit lately as the automaker hosted a big press briefing and the Ford Research & Innovation Center about "wireless health care," in which it is predicted that cars will crunch personal numbers.

Ford Spokesman Mike Rowe Testifies Before Senate Manufacturing Panel

MILWAUKEE – Mike Rowe, host of the Discovery Channel's TV program "Dirty Jobs with Mike Rowe" and a Ford product spokesman, last week testified before the Senate Commerce, Science and Transportation Committee's hearing on "Manufacturing Our Way to a Stronger Economy" in support of U.S. manufacturing jobs and the Association of Equipment Manufacturers' (AEM) I Make America campaign.

In his testimony, Mr. Rowe described his experiences working with manufacturers and skilled laborers across America, his personal initiatives in support of jobs creation, and the importance of paved roads and reliable bridges.

In his written testimony, Mr. Rowe said, "I am ready, able, and eager to partner with the federal government to help reconnect our country to the importance of manufacturing and skilled labor."

In addition, he demonstrated his support of the I Make America campaign stating he was proud to join forces with AEM, ". . .for the launch of I Make America, a national grassroots campaign to promote U.S. manufacturing jobs through infrastructure investment and the passage of export agreements."

"We are fortunate and proud to partner with Mike on the I Make America campaign, and in his support of U.S. manufacturing policies that help create American jobs," said AEM President Dennis Slater.

"AEM and I Make America commend Senators Rockefeller and Hutchison for holding this hearing and for their ongoing commitment to support policies that promote infrastructure investment and job creation in the manufacturing sector across the U.S.," he added.

To learn more about I Make America, visit us at www.IMakeAmerica.com. Submit a photo to the newly launched Picture a Better America Photo Contest at www.IMakeAmerica.com/photocontest to win a $250 prize and to help drive home for your elected officials the reality of America's crumbling infrastructure and showcase the hard-working men and women that make and grow America.

View short videos of employees and small business owners around the country telling the real life stories of how manufacturing impacts the national economy at www.ADayinAmericanLife.com.

I Make America is supported by the Association of Equipment Manufacturers (AEM) and its 850+ member companies. We are joined by the memberships of like-minded associations, American business owners, and citizens and local elected officials across the nation.

AEM is the North American-based international trade group providing innovative business development resources to advance the off-road equipment manufacturing industry in the global marketplace.

AEM membership comprises more than 850 companies and more than 200 product lines in the agriculture, construction, forestry, mining and utility sectors worldwide. AEM is headquartered in Milwaukee, Wisconsin, with offices in the capitals of Washington, D.C., Ottawa, Beijing and a European presence in Brussels.

Rowe, of course, is a product spokesman for Ford vehicles on a series of well-received national advertising campaigns.

Ford Trumpets Its Car Horn Research

DEARBORN, Mich., May 17, 2011 – Patricia Seashore doesn't like to sound off about it, but she knows better than most that there's more to a vehicle horn than a simple beep-beep or honk-honk.

In fact, this deceptively simple device actually takes into consideration customer horn-blowing behavior and its impact on the horn itself, including the amount of use, tonality and, sometimes, even physics.

"As Ford has expanded globally, we now have an increased awareness of what a horn is used for in all of our markets," said Seashore, Design & Release supervisor. "It's not the same all over the world."

In some parts of Europe, vehicles get two horns – on the steering wheel for traffic and on the back of the vehicle as an anti-theft system.

In North America, more and more customers are adapting their horn usage into a friendly greeting, and they want the horn to sound that way.

"We're getting away from using horns strictly as a warning," she said. "You'll hear them, of course, when someone gets cut off, or when something aggressive is happening in traffic. But you hear them, too, when people honk at a neighbor to say 'Hi,' or when they pull in a driveway to pick someone up."

Also in North America, owners use their horns as a locking confirmation to make sure their car is locked before they walk away, as well as a locator to find their vehicle in a crowded parking lot.

As a result, North American customers want a richer tone in their horns.

That's why they are trumpet horns, named for the plastic trumpet on them that attenuates the sound and makes it more melodic.

Most vehicles have dual trumpet horns, tuned to frequencies that are not unpleasant, but are just slightly discordant.

"While we don't want the sound to be too bristly, we don't want it to be too pleasant either," Seashore said. "We want it to, you know, grab people's attention a little."

Trumpet horns aren't the best solution for all vehicles. In South America, customers want a horn they can honk frequently in short stints, like a quick beep-beep.

In India, horns get far heavier use as drivers use them to help navigate through congested traffic and on less developed roads.

"We use a disc horn, which has a longer life, in a vehicle where the horn is part of daily driving," Seashore said.

Then there are customers who want both.

"In China, customers drive with one hand on the steering wheel and one hand on the horn. The horn is huge," said Seashore. "They use their horn extensively – but they want it to sound nice. So there we use something we call an electronic trumpet. It's a technology solution."

Global markets also bring climate concerns.

"China has one of the most extreme set of conditions, including cold temperatures and roads at 15,000-feet altitude," said Seashore. "So we're not only looking at customers' preferences, we must look at the physical environment of where the car is being driven.

"Altitude and temperatures affect the way sound waves travel – that's just physics."

Quiet EV cars still have horns attached, experts have pointed out.

Ford Champions Support for 'Cure'

DEARBORN – Ford employee Robin Glover will never forget the moment her doctor told her she had breast cancer.

"When you get that diagnosis, you don't hear anything," she said. "My whole body went numb, and it wasn't until I got in my car and was driving home that it really sunk in what was about to happen to me."

Glover fought an arduous two-year battle with the disease that included a partial lumpectomy, chemotherapy and radiation. Today, at age 46, she is cancer-free and counts herself among the nearly 2.5 million breast cancer survivors in the U.S.

"Cancer is not a death sentence," she said. "Early detection is key, and there are great advances in medicine that are helping improve the lives of many people with the disease."

Glover says she hopes to shine as a beacon of hope for all of those touched by breast cancer by taking part in the 20th annual Susan G. Komen Detroit Race for the Cure on Saturday, May 21, at Comerica Park.

"I've always been part of the Ford team supporting the cause, but I was never personally affected before," she said. "Just being among all the patients, survivors and family members will be amazing."

Prior to the Detroit race, Glover will inspire her Ford colleagues by speaking at Ford Warriors in Pink Day on Wednesday, May 18, at Ford World Headquarters in Dearborn, Mich.

Glover joins Ford Motor Company in celebrating its 17th year of support for Susan G. Komen for the Cure®. To date the company has dedicated more than $110 million to the cause.

In addition to providing financial support, Ford encourages its employees to participate in local races. More than 75,000 Ford employees run or walk in races across the country to support the cause, and thousands of Ford dealers across the nation participate in their local race events.

"Ford is committed to making a difference," said Crystal Worthem, manager, Ford Brand Content and Alliances. "We also are dedicated to raising awareness that early detection of breast cancer saves lives."

In addition to early detection, Glover credits her recovery to her faith and the support of her family and friends, especially her co-workers at Ford who formed a group in her honor called "Robin's Wings," named, so they say, because "her faith enabled her to soar above fear and doubt to get through this difficult journey." "Robin's Wings" will walk with Glover in the Detroit Race for the Cure, and they raised money in her name to support breast cancer research and education.

Glover says she hopes her story will encourage others to join the fight against the insidious disease that is second only to lung cancer as a cause of cancer death among women.

Ford Warriors in Pink: A 365-day commitment to the cause The Ford Warriors in Pink campaign is designed to recognize the strength and courage it takes to deal with the everyday challenges of fighting breast cancer 365 days a year.

"Warriors in Pink is about women and men finding strength within themselves – their inner Warrior – at a time they need it most," explained Worthem.

New 2011 Warriors in Pink apparel and accessories for men, women and children feature important symbols that signify hope, strength and unity to all those affected by the disease.

The merchandise – which can be personalized with custom messages to honor a loved one who has survived or is currently fighting breast cancer – is sold at www.fordcares.com, and 100 percent of the net proceeds go directly to Susan G. Komen for the Cure.

The people modeling merchandise on the Warriors in Pink website are all survivors or family members of survivors. Glover is one of them. And all of their stories are told in videos at www.shopwarriorsinpink.com.

Through the Warriors in Pink initiative, Ford brings together people who have been touched by breast cancer, forming a national community of supporters united in compassion and dedication to fight the disease. Ford encourages people everywhere to share their stories of hope and perseverance in the face of the disease at http://stories.fordcares.com.

Comerica Park, by the way, has become a major gathering place for a variety of nonprofit causes, led by the Detroit Race for the Cure.

The Detroit Tigers ownership has been generous in allowing the nonprofit community access to Comerica Park and related facilities for these fund-raisers in downtown Detroit.

Ford Fund Donates $50K To Mississippi Relief

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"There is no more immediate issue for families and communities than having adequate food and water," said Jim Vella, president, Ford Motor Company Fund.

"Our partnership with Feeding America gives us the opportunity to make a difference where the need is greatest."

Feeding America's network prepares for disasters by prestaging water, food and grocery products throughout the nation. When a disaster occurs, Feeding America distributes these products immediately and sends trained disaster relief workers to the impacted area to work in cooperation with local organizations and federal, state and local emergency management agencies.

Feeding America provides low-income individuals and families with the fuel to survive and even thrive. As the nation's leading domestic hunger-relief charity, our network members supply food to more than 37 million Americans each year, including 14 million children and 3 million seniors. Serving the entire United States, more than 200 member food banks support 61,000 agencies that address hunger in all of its forms.

Ford Motor Company Fund and Community Services works with community partners to advance driving safety, education and American heritage and community life.

The Ford Motor Company Fund has operated for more than 60 years with ongoing funding from Ford Motor Company.

The award-winning Ford Driving Skills for Life program teaches new drivers through a variety of hands-on and interactive methods. Innovation in education is encouraged through national programs that enhance high school learning and provide college scholarships and university grants. Through the Ford Volunteer Corps, more than 25,000 Ford employees and retirees each year work