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Intensive Dune Buggy Desert Routes and Arctic Testing Help Ensure Ford Intelligent All Wheel Drive is Ready for Anything

- Ford's Intelligent All Wheel Drive technology tested across monster sand dunes in middle of Mojave Desert in California
- Performance and durability also endures Arctic Circle snow and high-altitude European Alps; and temperatures that range from -30C to 40C and beyond
- Ford Intelligent All Wheel Drive monitors driver's use of steering and pedals to predict and prevent wheel spin; Ford developing future all-wheel drive systems that monitor more sensors and controls

LOMMEL, Belgium, Dec. 9, 2015 – Deep in California's Mojave Desert, extreme sports enthusiasts pilot quadbikes, motorbikes and "sand rail" dune buggies up and down towering sand dunes.

Nearby, Ford engineers keep a safe distance from the thrill-seekers while repeating gruelling 16 kilometre non-stop loops through the dunes in 38C heat and more, to develop and prove out the [Intelligent All Wheel Drive](#) system for the all-new Ford Edge sport utility vehicle.

Ford's Intelligent All Wheel Drive system measures how well a car's wheels are gripping the road surface and can deliver a seamless transition of torque between all four wheels in less than 20 milliseconds – twenty times quicker than it takes to blink – to provide a more secure footing for [Ford Edge](#), [Galaxy](#), [Kuga](#), [Mondeo](#) and [S-MAX](#) drivers, especially in slippery conditions.

Ford also offers Ford Performance All Wheel Drive for the [Ford Focus RS](#) high-performance hatchback to optimise performance on road and track, as well as driver-selectable four-wheel drive for the [Ford Ranger pickup](#) and a unique Intelligent All Wheel Drive system for the [Transit van](#) for tackling tough off-road terrain.

Ford develops the technologies in challenging conditions from gruelling deserts, to the Arctic Circle, and Ford's top secret test facility in Lommel, Belgium, to ensure customers can expect optimised traction and durability.

"So that extreme sports enthusiasts in dune buggies don't get too big a surprise when they crest the next dune and meet road-going SUVs in the middle of the desert, we attach 3-metre flag poles to models like our all-new Edge to make them easier to spot from further away when we head out into some of the most remote and unforgiving terrain in California," said Derek Ward, technical specialist, Ford Global Advanced Vehicle Dynamics. "Our Intelligent All Wheel Drive technology means we can take the Edge through territory many customers would be surprised to learn it can handle."

At Austria's Grossglockner High Alpine Pass – one of the highest paved roads in Europe – Ford tests Intelligent All Wheel Drive-equipped vehicles to ensure they can tow trailers or caravans up unremitting inclines without overheating or suffocating their powertrains in thin mountain-top air.

The 48 kilometre stretch climbs to 2,504 metres through 36 challenging hairpin bends and at an average gradient of 9 per cent up Austria's highest mountain.

Development and testing regimes for Ford's all-wheel drive and four-wheel drive systems also involve:

- Tackling the rugged terrain of the Flinders Ranges – the largest mountain range in South Australia
- High speed driving at the hands of Ford's vehicle dynamics experts in Lommel; at the Nardo test facility, Italy; and at the Nuerburgring in Germany
- Enduring temperatures in excess of 40C at Ford's Arizona Proving Grounds, U.S.
- Off-road testing at demanding locations across South Africa and Australia
- Cold climate testing at Wanaka in New Zealand, Arjeplog in Sweden, the Alaskan interior, and the Finnish Arctic Circle in temperatures of -30C

Testing on different types of surface and in a variety of climates enables Ford engineers to fine-tune the response strategies and torque delivery of the Intelligent All Wheel Drive systems, and hot climate off-road testing for the Ford Kuga also led to the development of shielding ducts that optimised airflow to the power transfer unit for greater durability.

For the Focus RS, two years of intensive testing on both road and track surfaces delivered a new Ford Performance All Wheel Drive system carefully optimised to work in tune with the model's sophisticated suspension and steering systems, and featuring a water-cooled power transfer unit for ultimate performance and durability.

Predictive technology

Ford's Intelligent All Wheel Drive technology uses sophisticated sensors to compare vehicle speed and individual wheel speeds to detect when a wheel is slipping, and also is able to predict when a loss of traction may occur from the driver's use of the steering and pedals. The system can pre-emptively adjust torque distribution to avoid wheel spin, reducing the workload for drivers and delivering smoother journeys for passengers.

Ford is developing future all-wheel drive technologies that will monitor inputs from a greater number of sensors and vehicle controls, delivering more traction and even better fuel efficiency from all-wheel drive-equipped vehicles.

"All-wheel drive technology is one of the most effective ways to enhance safety and confidence for our customers. By early next year Ford will offer all-wheel drive and four-wheel drive on eight models – almost 50 per cent of our line-up – compared with three models in 2012," Ward said.

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About Ford Motor Company

Ford Motor Company, a global automotive industry leader based in Dearborn, Mich., manufactures or distributes automobiles across six continents. With about 197,000 employees and 67 plants worldwide, the company's automotive brands include Ford and Lincoln. The company provides financial services through Ford Motor Credit Company. For more information regarding Ford and its products worldwide, please visit www.corporate.ford.com.

Ford of Europe is responsible for producing, selling and servicing Ford brand vehicles in 50 individual markets and employs approximately 53,000 employees at its wholly owned facilities and approximately 68,000 people when joint ventures and unconsolidated businesses are included. In addition to Ford Motor Credit Company, Ford Europe operations include Ford Customer Service Division and 24 manufacturing facilities (16 wholly owned or consolidated joint venture facilities and 8 unconsolidated joint venture facilities). The first Ford cars were shipped to Europe in 1903 – the same year Ford Motor Company was founded. European production started in 1911.

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