Ford connects cars and sensors to improve road safety

- Ford is developing a digital road safety tool that could predict potential incident hotspots, using data from sources including connected vehicles and roadside sensors

- The initiative follows extensive Ford research into how advanced analytics and data from connected vehicles can be used to improve urban mobility and road safety. This identified how relatively minor improvements could potentially address issues

LONDON, Aug. 20, 2020 – A consortium led by Ford is developing an innovative predictive road safety tool which, using data from connected vehicles and intelligent roadside sensors, could help to make travel in towns and cities safer and easier.

Each year more than 1.3 million people are killed on roads around the world[1] – around 3,700 every day – with road injuries the eighth leading cause of death globally[2] . On top of the human impact, accidents also have significant financial consequences.

The Data-Driven Road Safety Tool will analyse information from connected vehicles, smart roadside sensors and local-authority data to predict the likely locations and possible root causes of potential road safety hotspots. The insights will enable cities to take pre-emptive action to address roads and junctions that pose the highest risks to road users.

“Soon every new vehicle will be a connected vehicle, and we see this as an opportunity to reduce road traffic incidents and save lives in a significant way,” said Jon Scott, project lead, City Insights, Ford Mobility, Europe. “By collaborating with leading innovators, experts and academics – and with the backing of Innovate U.K.– we truly believe we can help improve mobility for millions around the world.”

Ford Mobility is working alongside partners including Oxfordshire County Council, AI sensor specialists Vivacity Labs, and leading academics from Loughborough University’s Transport Safety Research Centre, with support from Transport for London. The aim is to develop the tool into a solution that could benefit cities and road users around the world. The initiative has now received financial backing from the Innovate UK, the government-backed innovation fund.

Data-driven road safety
Ford has conducted extensive research into the opportunity for connected vehicles and predictive analytics to help improve road safety. Now, up to 700 passenger and commercial vehicles will be voluntarily connected across Oxfordshire and London as part of the 18-month project starting this summer.

Detailed telematics data from the fleet of vehicles – such as brake or accelerator pedal usage and steering wheel angle – will be analysed alongside information from up to 25 additional smart sensors, bringing the total number in use up to 100.

Vivacity's roadside sensors employ machine learning algorithms to detect near-miss incidents and are able to analyse movement patterns of vulnerable road-users such as cyclists and pedestrians, as well as non-connected vehicles. All data shared by the sensors is anonymised with video feeds discarded at source, enabling safer roads without intruding on privacy.
The insights and analysis will be used to further prove and develop the digital road safety algorithm and tool into a scalable, commercial product to benefit cities and citizens around the world. The consortium will also seek to uncover further real-world applications for predictive road safety-related insights.

Connected Vehicle Trials
The project follows two successful trials in London in which analysts and data scientists from Ford Mobility sampled more than 1 million miles of driving by connected vehicles to identify, analyse and provide detailed safety mitigation guidance to local authorities on various road safety hotspots in Greater London[4]. *

Recommendations for improvements included the introduction of red-light cameras to deter signal jumping, cutting back vegetation to ensure road signage was clearly visible, double-height signage and signals, resurfacing carriageways and raising service covers.

Ford Mobility is also working with authorities in Cologne, Germany, and Valencia, Spain, to identify further ways in which analysis of information connected vehicles and infrastructure can benefit urban mobility.

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1. World Health Organisation: Road traffic injuries
2. World Health Organisation: The top 10 causes of death
3. GOV.UK: Accident And Casualty Costs
4. Ford Media Center: Ford Exposes 'Hidden' Dangers On City Streets, Uses Big Data And Connected Vehicles To Help Improve Road Safety

* For the full report, including animated data visualisations, methodology and video interviews with its researchers, visit citydatareport.fordmedia.eu

About Ford Motor Company
Ford Motor Company is a global company based in Dearborn, Michigan. The company designs, manufactures, markets and services a full line of Ford cars, trucks, SUVs, electrified vehicles and Lincoln luxury vehicles, provides financial services through Ford Motor Credit Company and is pursuing leadership positions in electrification; mobility solutions, including self-driving services; and connected services. Ford employs approximately 188,000 people worldwide. For more information regarding Ford, its products and Ford Motor Credit Company, 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 45,000 employees at its wholly owned facilities and consolidated joint ventures and approximately 58,000 people when unconsolidated businesses are included. In addition to Ford Motor Credit Company, Ford Europe operations include Ford Customer Service Division and 18 manufacturing facilities (12 wholly owned facilities and six 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.*

About Vivacity Labs

Vivacity Labs is a London-based technology company providing AI systems for road infrastructure management. Its sensors gather anonymous data on how a road space is being used, from measuring the flow of cyclists and other classes of vehicle to detailing the path that pedestrians take across the road. These sensors have been deployed in more than 15 cities across the UK, and are an important tool in both the strategic and real time management of urban transport.

About Loughborough University
Loughborough is one of the country's leading universities, with an international reputation for research that matters, excellence in teaching, strong links with industry, and unrivalled achievement in sport and its underpinning academic disciplines. It has been awarded five stars in the independent QS Stars university rating scheme, named the best university in the world for sports-related subjects in the 2020 QS World University Rankings and University of the Year by The Times and Sunday Times University Guide 2019.

About Oxfordshire County Council
Oxfordshire County Council, established in 1889, is the county council, or upper-tier local authority, for the non-metropolitan county of Oxfordshire. Oxfordshire County Council provides a wide range of services, including education (schools, libraries and youth services), social services, public health, highway maintenance, waste disposal, emergency planning, consumer protection and town and country planning for matters to do with minerals, waste, highways and education.
www.oxfordshire.gov.uk

About Transport for London
In July 2018 the Mayor, TfL and Metropolitan Police launched a bold Vision Zero Action Plan to eliminate deaths and serious injuries on London's streets by 2041. Each year more than 4,000 people are killed or seriously injured on London's roads, taking a devastating toll on the people involved, their families and communities across the capital

Ford in Belgium & Luxemburg
Ford Belgium distributes Ford vehicles and Ford original parts in Belgium & Luxemburg, since 1922. Ford Lommel Proving Ground is the lead test facility for validation of all Ford models in Europe, with approximately 390 employees.

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