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News Release

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Trials of UK's first zero emission automated logistics HGV taking place in the North East

The revolutionary 5G Connected and Automated Logistics (CAL) project progresses with autonomous driving testing of the UK's first automated 40 tonne truck, powered by 5G, at Vantec in Sunderland.

Following the announcement of the onboarding of Terberg as a partner earlier this year, and the arrival of the updated autonomous and electric tractor unit in the North East in March, the 5G CAL proof of concept trial is now in sight as the project team continue on their mission to be the first in the UK to deliver Zero Emission Automated Logistics.

Terberg's HGV is on-site at Vantec in Sunderland and has now been equipped with autonomous and teleoperation technology, and the project team is geared up to deliver the UK first zero-emissions automated logistics test, which started on Nissan's test track in mid-March.

The vehicle's teleoperations system, installed in March, uses next generation technology connected to a private 5G network. The state-of-the-art system allows remote teleoperations to inform a team member (driver) to switch from autonomous operation to remote driver controls to overcome any unexpected conditions such as an obstacle or unexpected object on the road.

Safety is paramount and the 5G CAL team has embraced IoT opportunities with project partner StreetDrone, who has added a series of drive by wire components and live sensors as well as cameras (standard and LiDAR) on the vehicle's roof. When combined with the additional LiDAR's and camera's installed along the route it provides the truck with an extended field of view, augmenting its ability to react appropriately to changes in the external environment.

Testing will continue for several weeks and will consist of self-driving testing on the test track at Nissan, as well as testing of the teleoperations system, before progressing to live route testing from mid-April. This crucial testing phase is ultimately building up to proof of concept trials in late May, which will also continue for a number of weeks.

The 5G CAL pilot is a proof of concept to prove that an autonomous truck can be automated to drive between Vantec and Nissan. This pivotal project is a natural evolution of the automated logistics journey that Nissan embarked upon 15 years ago to revolutionise the auto guided vehicles market (AGVs). Driven by an ambition to automate deliveries between suppliers and facilities, this proof of concept encompasses all the essential elements to boost the connected autonomous mobility sector, in an inherently safe environment (on the test track). This will give rise to the first commercial opportunities and a carefully managed rollout on to public roads.

Julia Lopez, Digital Infrastructure Minister, said: “The 5G technology being trialled in Sunderland could be crucial to boosting the UK’s productivity and reducing emissions, so I’m thrilled the government has been instrumental in making this project a reality.

“We’ve funded dozens of cutting-edge trials like this across the country to ensure we unleash the true potential of 5G to level up our economy and improve people’s lives.”

Paul Butler, CEO of the North East Automotive Alliance (NEAA), said: “The North East automotive sector is a beacon of productivity, we continually strive for manufacturing excellence and this project is yet another example of how the North East leads the way. Industrial digitalisation provides the next step change in manufacturing productivity, we must continue to embrace technology with forward thinking digital infrastructure planning from partners such as Sunderland City Council.”

Paul added: “As part of our five-year strategy, we have an ambition to attract more R&D and innovation-focused activities to further strengthen the region to be an automotive powerhouse. This aligns to the North East Local Enterprise Partnership’s (NELEP) more and better jobs strategy as it’s a crucial way to retain talent in the region and attract new talent too.

“This 5GCAL project is the first of several phases required to operationalise this technology, however the scale of opportunity for this solution is huge and will no doubt deliver huge benefits to the North East automotive sector and beyond.”

Patrick Melia, Chief Executive at Sunderland City Council, said: “Equipping businesses across Sunderland with the next generation infrastructure that we are building in our smart

city, will allow us to continue breaking boundaries as we introduce new technology with an array of influential benefits for people and places.

“Shaping the future of connected automated logistics and urban mobility demonstrates our collective ambitions to lead more efficient, safer and environmentally friendly solutions to sustain our city, its prevalent industries and the planet alike.”

Steve Sutcliffe, General Manager, Inbound Logistics at Nissan, said: “The 5G CAL project has shown us how the next level of logistics could look with further development and investment.

“The concept of autonomous delivery into the plant is a really exciting one, especially as we move towards a carbon neutral future at Nissan.”

Martin Kendall, Managing Director at Vantec Europe Limited, said: “This is a significant step towards an autonomous supply chain on a much larger scale. Always taking safety into account, we are currently looking at potential ways to scale these technologies on the trial route.

“The key focus at this point is to optimise communication between multiple autonomous vehicles operating together. As test trials continue, we would be looking at the vehicles dealing safely with bridges, traffic lights, roundabouts and security gates – all of which you would see on a typical real-life road journey. All the while, we are accelerating the development of autonomous software for the wider industry.”

Barney Smith, CEO and Founder at Perform Green, said: “5G technology is essential to make the 5G Connected Automated Logistics (CAL) pilot a reality. The low latency, high bandwidth and high security of the 5G network are essential components of the autonomous vehicle’s operations, enabling the fast and accurate transfer and upload of data from the truck to the remote operating system.

“The 5G CAL pilot is a very exciting opportunity to showcase the power of 5G, the underpinning small cell network and supporting smart city infrastructure which is fuelling these advancements.”

Mike Potts, Founder and CEO at StreetDrone, said: “This project provides an ideal testbed for the roll-out of a UK-developed autonomous product. By driving more efficiency into industrial supply chain operations, we are supporting smarter processes and outcomes for businesses across the region and the wider UK.

“The technologies that we’ve already developed can be used in an industrial logistics setting and will quickly scale to many other similar contexts, where reducing cost and increasing safety are critical factors in profitable operations.”

The 5G CAL project was awarded a share of £30 million through 5G Create, an open competition combining British creativity with innovative new uses for 5G as part of the Department for Digital, Culture, Media and Sport’s £200 million 5G Testbeds and Trials programme (5GTT).

The government is pushing ahead with its plans to unlock new economic benefits and productivity boosts from 5G while commercial rollout continues at pace. It has now funded 24 5G testbeds across the UK, which have trialled almost 70 different 5G technologies, products and applications.

The £30 million package consists of £16.4 million from the government match-funded by organisations ranging from large tech and telecoms companies to SMEs and local authorities.

〈Pictures at the event〉

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Image: 5G CAL trail autonomous HGV with Vantec Europe trailer at Turbine site

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