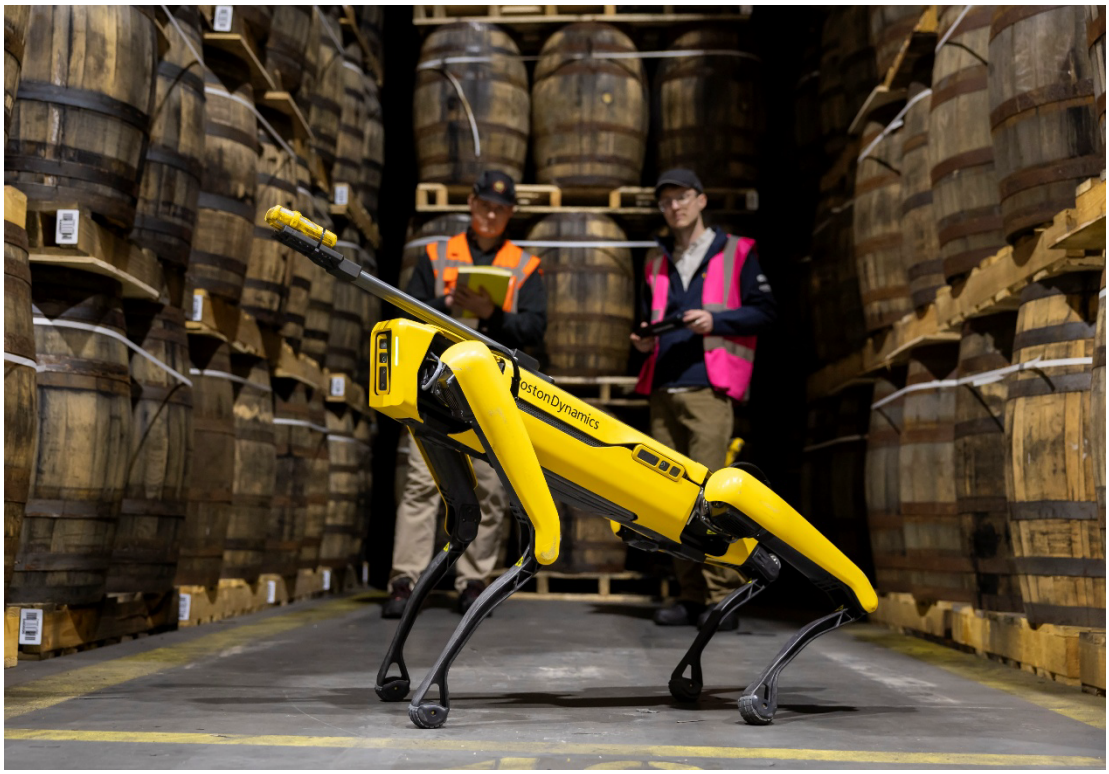
ROBOT DOG SNIFFS OUT THE FUTURE OF WHISKY WAREHOUSING INNOVATION AT BACARDI



Glasgow, United Kingdom, December 15, 2025 – In a first for the Scotch whisky industry, a new trial with Bacardi is exploring whether advanced robotics could help identify small but potentially expensive ethanol leaks in aging warehouses.

The National Manufacturing Institute Scotland (NMIS) is validating its own robotic sensing kit, developed at its Digital Process Manufacturing Centre (DPMC) in Irvine, on a Boston Dynamics Spot robot at the Bacardi-owned John Dewar & Sons maturation site near Glasgow. The initiative is also supported by the Scotch Whisky Research Institute (SWRI).

The system uses a sensor, held by a 3D-printed arm created by NMIS engineers, to detect ethanol vapour levels as the robot follows a defined path through the warehouse. As part of the collaboration, Bacardi helped design the experiment and led baseline testing ahead of the trial.

The early-stage trial explores how autonomous inspection could be applied across multiple industries – from whisky to chemicals and energy. While the focus here is on whisky casks, the same sensing approach could also help improve efficiency on other routine inspection tasks in different manufacturing environments.

Ethanol evaporation is a natural part of the whisky maturation process, which happens as the liquid sits in the barrel to age for a minimum of three years before it legally becomes Scotch whisky. This

loss is known as the “angel’s share” and requires careful monitoring to ensure as much liquid as possible is kept in the barrel, as well as ensuring safety.

Traditional inspection involves significant manual handling and reliance on visual cues, which is time consuming and prone to inconsistency. Robotics could offer a repeatable, data-driven alternative – though NMIS is clear this is an early-stage proof of concept rather than a live operational system. The next step for the project could involve trialling the same sensor in a different type of robot, likely embedding the sensor in the robot rather than mounting it on an arm to deliver greater reliability and improved functionality.

Family-owned spirits company Bacardi has operated five distilleries across Scotland – Aultmore, Aberfeldy, Royal Brackla, Craigellachie, and Macduff – for more than 25 years, nurturing and respecting the heritage of each, while continuously innovating and embracing the latest technology to reduce environmental impact and increase efficiency and quality. Most recently, the company added three new state-of-the-art aging warehouses at its 200-acre blending and maturation centre, Poniel in southeast Glasgow where this trial has taken place.

Angus Holmes, Whisky Category Director at Bacardi said: *“Craftmanship and heritage remains at the heart of our production of DEWAR’S® Blended Scotch whisky and our portfolio of single malts, but there is also great potential for innovation and technology to support the industry to become more efficient and data-driven. We’re proud to be playing our part to pioneer this new technology in the whisky industry and look forward to progressing from these trials to developing a live system that can be used at our sites in the future. The team loved having the robot dog around so much we gave him his own Bacardi name – ‘Royal Bark-la’ in homage to our ROYAL BRACKLA® Single Malt.”*

Andrew Hamilton Head of the Digital Process Manufacturing Centre (DPMC) added: “*Our aim here is to validate our own sensing kit and see whether robots can take on this type of inspection work. The early results are promising, and it shows how manufacturing technologies being developed in Scotland are relevant across many sectors including the whisky industry. It’s been fantastic to work with Bacardi on this – a great example of a company embracing and contributing to innovative new approaches for the industry.”*

Officially opened earlier in 2025, the DPMC, based in North Ayrshire, supports the process manufacturing industries with next-generation technologies, funded in part through the £251 million Ayrshire Growth Deal. NMIS is operated by the University of Strathclyde and part of the High Value Manufacturing (HVM) Catapult.

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About Bacardi Limited

Bacardi Limited, the world's largest privately held international spirits company, produces, markets, and distributes spirits and wines. The Bacardi Limited portfolio comprises more than 200 brands and labels, including BACARDÍ® rum, PATRÓN® tequila, GREY GOOSE® vodka, DEWAR'S® Blended Scotch whisky, BOMBAY SAPPHIRE® gin, MARTINI® vermouth and sparkling wines, CAZADORES® 100% blue agave tequila, and other leading and emerging brands including WILLIAM LAWSON'S® Scotch whisky, D'USSÉ® Cognac, ANGEL'S ENVY® American straight whiskey, and ST-GERMAIN® elderflower liqueur. Founded more than 163 years ago in Santiago de Cuba, family-owned Bacardi Limited currently employs approximately 8,000, operates production facilities in 10 countries and territories, and sells its brands in more than 160 markets. Bacardi Limited refers to the Bacardi group of companies, including Bacardi International Limited. Visit http://www.bacardilimited.com or follow us on LinkedIn and Instagram.

About the National Manufacturing Institute Scotland

The National Manufacturing Institute Scotland (NMIS) is a group of industry-led manufacturing R&D, innovation and skills facilities supported by a network of Partners across Scotland, all working together to transform the future of manufacturing.

The group has a national mandate to create and deliver inspiring, sustainable and translational research and skills for all by accelerating innovation in the manufacturing community.

It is where industry, academia and the public sector work together on ground-breaking manufacturing research to transform productivity levels, make companies more competitive and boost the skills of our current and future workforce.

The NMIS Group includes the University of Strathclyde's Advanced Forming Research Centre (AFRC), Lightweight Manufacturing Centre, Digital Process Manufacturing Centre and researchers working with companies across the manufacturing community in Scotland, the wider UK and beyond – from aerospace giants to renewable energy disruptors, first-time inventors to household automotive names. It also includes the Manufacturing Skills Academy, which is transforming the manufacturing workforce of today and tomorrow and a Capability Network bringing together leading organisations from across the Scottish research and innovation, education and training communities.

NMIS is operated by the University of Strathclyde. It is supported by the Scottish Government, Scottish Enterprise, Highlands and Island Enterprise, South of Scotland Enterprise, Skills Development Scotland, Renfrewshire Council and the Scottish Funding Council. It is part of the UK's High Value Manufacturing Catapult.

The flagship NMIS building is at the heart of the Advanced Manufacturing Innovation District Scotland in Renfrewshire. The distinct 11,500m2 heather-coloured building, opened in June 2023, houses the NMIS Digital Factory, Manufacturing Skills Academy, Lightweight Manufacturing Centre and publicly accessible, collaboration hub, with a window to the world welcoming all who pass to look inside the world of advanced manufacturing.
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