New £210 million centre to create jobs of the future with AI and quantum computing

- New centre launched in partnership with IBM to cement quantum and artificial intelligence (AI) expertise
- £210 million investment over 5 years will give public and private sectors access to cutting-edge computing to boost innovation
- Centre will support 60 new scientific jobs in Liverpool City Region

The Hartree National Centre for Digital Innovation (HNCDI), based at the Science and Technology Facilities Council's (STFC) Daresbury Laboratory in the Liverpool City Region, will create vacancies for an additional 60 scientists and opportunities for students to gain invaluable hands-on experience.

The centre – a partnership between STFC and IBM – will bring together world-leading expertise in artificial intelligence (AI) and quantum computing to support the application of the cutting-edge technologies in industry and the public sector.

Possible industry applications of quantum computing include optimising complex logistics such as picking and packing orders in large warehouses for supermarkets; traffic routing; energy distribution; improving design and manufacturing processes across automotive sectors.

The government will invest £172 million over 5 years through UK Research and Innovation (UKRI), with an additional £38 million being invested by IBM. £28 million of the government's investment will be in the first year.

Science Minister Amanda Solloway:

> Artificial intelligence and quantum computing have the potential to revolutionise everything from the way we travel to the way we shop.
>
> This fantastic new partnership with IBM will not only help businesses get ready for the future of computing, but create 60 jobs in the region – boosting innovation and growing the economy as we build back better from the pandemic.

The HNCDI will make cutting-edge technologies like AI and quantum computing more accessible to businesses and public sector organisations.

As well as breaking down practical barriers to using new technologies, for example by providing access to equipment and infrastructure, the team of experts at HNCDI will also provide training and support to make sure the UK

is at the forefront of the next generation of computing.

Dario Gil, Senior Vice President and Director, IBM Research:

> The world is facing grand challenges which demand a different approach towards science in computing, including AI and quantum computing, to engage a broad community across industry, government, and academia to accelerate discovery in science and business.
>
> This partnership establishes our first Discovery Accelerator in Europe driven by our two UK-based IBM Research locations in Hursley and Daresbury as they contribute to our global mission of building discovery-driven communities around the world.

The technologies that have transformed our lives – the building blocks of modern computers, the mobile phone, the laser, the MRI scanner – are all products of quantum science. This involves harnessing the unique ways that light and matter behave at tiny atomic or subatomic levels.

A new generation of quantum technologies exploit breakthroughs in the way that we are able to precisely manipulate and measure these special properties, to engineer quantum devices – like sensors and computers – with dramatically enhanced functionality and performance.

The centre will work across sectors including materials, life sciences, environment and manufacturing. This will include collaboration with academic and industrial research communities, including start-ups and SMEs, public sector, and government.

Professor Mark Thomson, Executive Chair of STFC:

> The HNCDI programme will foster discovery and provide a stimulus for industry innovation in the UK.
>
> By allowing industry to access a ready-made community of digital experts and cutting-edge technology, it will provide momentum for new ideas and solutions.
>
> This programme has the potential to transform the way UK industry engages with AI and digital technologies, to the benefit of not just research communities but all of society.

Notes to editors

About the Hartree National Centre for Digital Innovation (HNCDI)

The HNCDI aims to:

- Turn ideas into practical digital solutions to maximise benefit for UK industry

- find the right technologies needed for projects to succeed and make businesses more competitive
- provide training and skills to staff, in order to take full advantage of digital technologies
- support industry investment in emerging technologies to make businesses more resilient

STFC Hartree Centre

The Science and Technology Facilities Council (STFC) Hartree Centre's mission is to transform UK industry through high performance computing, data analytics and AI technologies. As part of UK Research and Innovation, the Hartree Centre is home to some of the most advanced computing, data and AI technologies in the UK.

From early stage SMEs to international corporations, Hartree Centre experts work with industry and the research community to address real life challenges and accelerate the adoption of high performance technologies, delivering transformative gains in performance, productivity and time to market.

About IBM

IBM is a leading global hybrid cloud and AI, and business services provider, helping clients in more than 175 countries capitalise on insights from their data, streamline business processes, reduce costs and gain the competitive edge in their industries. Nearly 3,000 government and corporate entities in critical infrastructure areas such as financial services, telecommunications and healthcare rely on IBM's hybrid cloud platform and Red Hat OpenShift to affect their digital transformations quickly, efficiently and securely. IBM's breakthrough innovations in AI, quantum computing, industry-specific cloud solutions and business services deliver open and flexible options to our clients. All of this is backed by IBM's legendary commitment to trust, transparency, responsibility, inclusivity and service.