MoD invests in quantum computer potential

T
he Ministry of Defence has bought the Government's first quantum computer from a company based in west London's White City.

The machines are able to rapidly make highly complex calculations that cannot be done by regular computers.

The MoD will work with Orca Computing — a start-up with roots at Oxford University — on applying the computers to defence applications. Orca is believed to have beaten off strong competition from major US rivals.

The deal marked a "milestone moment", according to Stephen Till of the ministry's Defence Science and Technology Laboratory (DSTL).

He added: "Accessing our own quantum computing hardware will not only accelerate our understanding of quantum computing, but the computer's room-temperature operation will also give us the flexibility to use it in different locations for different requirements." Most computers process data in bits, which have a binary value of either zero or one, whereas quantum computers use a two-state unit for data processing called a qubit.

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Professor Winfried Hensinger, head of the Sussex Centre for Quantum Technologies at University of Sussex, told the BBC the true potential of quantum computers will take time to fully materialise.

He said: "They can't actually solve any practical problems yet. They're enabling you to maybe gauge the possibilities of what working on a quantum computer would have if you can scale this machine to really large system sizes."

In a year-long programme of activity, the MoD will use Orca's PT-1 model, the first computer of its kind to operate at room temperature.

Richard Murray, chief executive of Orca, said the company's work with the MoD is a "significant vote of confidence". He added: "Our partnership with the MoD gives us hands-on close interaction; and working with real hardware will help us to jointly discover new applications of this revolutionary new technology."