

15 November 2022

Quantum Blockchain Technologies Plc
(“QBT” or “the Company”)

R&D Update

The board of Quantum Blockchain Technologies (AIM: QBT) is pleased to update the market with the latest advances by its research and development (“R&D”) team, which is working at developing proprietary methods to create cheaper, faster and more energy efficient Bitcoin (“BTC”) miners.

Highlights

- Preliminary results of Machine Learning Method “B” indicating 30% improvement over commercially available ASIC chip-based miners,
- Regularities identified within the SHA-256 algorithm mark progress towards potential patent filing
- Investigating potential of third-party licensing strategy to exploit early revenues
- Appointment of Dr. Rita Pizzi as Chief Research Officer

Machine Learning and AI

The first results obtained by two of the Company's three Machine Learning (ML) groups in respect of the development of the Company's first two knowledge-based algorithms (described in the Company's RNS dated 23 May 2022 as Method “A” and Method “B”), relate to a prototype proprietary software accelerator for BTC mining, which is now in a position to undergo intensive testing.

The computational requirements to validate both Method A and Method B by testing at the current level of difficulty of BTC extraction are very challenging. The Company has not ruled out the use of a supercomputer for such tests, but a more pragmatic approach in the short term is based on the use of existing market-available ASIC miners. The Company has already acquired a number of ASIC miners with the intention that the control software on the ASIC miners will be replaced by QBT's own proprietary software, based on Method B.

Additional miners will be acquired to test the performance of both Method A and Method B at the current mining difficulty.

Interesting preliminary laboratory results have been achieved to date with Method B, which is based on two different combined ML methods, indicating a statistical improvement of up to 30% over existing commercially available ASIC chip-based BTC miners. That is, regardless of the performance of the ASIC chip used by the miner, the Company's proprietary software could statistically still increase mining speeds by up to 30%, whilst not impacting the miner's power consumption.

Provided that the performance of the Method “A” and / or Method “B” algorithms are confirmed, the goal is to run them on existing commercial miners to improve their performance, as stated above, by replacing the native control software with QBT's own control software. Based on current test data, we would expect to see an immediate improvement in the overall performance of the mining rig, without any need for additional hardware investment.

To ensure the success of this approach, the Company is also working to modify the control software of the miner operating system.

Quantum Computing

While the Company believes its approach to Quantum Computing has great potential, it also believes that it will be some years before sufficiently powerful quantum computers become available to allow the Company to take full advantage of its approach.

In the meantime, QBT is continuing to refine the quantum algorithm it has developed.

SHA-256 Optimisation

The Company continues to work closely with its cryptography expert, who has now been consulting for QBT for 18 months. Our recent findings for local improvements of the SHA-256 computation are currently being collated in order to reach a critical mass, which (following up on the 23 May 2022 RNS) may have the potential to justify the filing of a new patent application relating specifically to a proprietary ASIC implementation.

FPGA/ASIC

While waiting for the consolidated results both from the cryptography expert and the ML R&D teams to be confirmed, the FPGA/ASIC Input/Output interface and the intra-ASIC communication protocols are being developed.

At the same time, several performance assessments of different architectures which could be included in the ASIC design implementation of Method "B" have now been preliminarily evaluated, with the outcome expected to prove the efficiency of this method of hardware implementation.

IT infrastructure

During the last few months, the IT R&D platform has been improved, reaching nearly 100,000 GPU cores. Moreover, a first set of 100TH/s ASIC miners have been acquired, where the ML Method A and Method B mining software will shortly be installed.

As referred to above, more ASIC miners are likely to be acquired shortly to speed up Method "A" and Method "B" testing.

Chief Research Officer

QBT has recently appointed Dr. Rita Pizzi, as its Chief Research Officer. Dr. Pizzi is a former senior researcher and professor of Artificial Intelligence and Data Analysis at the Department of Computer Science of Milan University (<http://pizzi.di.unimi.it/CV.html>). Dr. Pizzi will be responsible for coordinating several research teams, while working in close operational contact with Francesco Gardin, QBT's chairman and CEO. Dr. Pizzi will not be joining the board at this time.

Dr. Pizzi has been working with the Company for approximately 18 months.

R&D Tax Relief

The Company, as part of HMRC's "Research and Development Tax Relief" scheme, has received £109,000, net of adviser commissions and fees, from HMRC, as a contribution towards the Company's 2021 R&D costs. A similar application will be filed for 2022 R&D costs, at the beginning of 2023.

Francesco Gardin, CEO and Executive Chairman of QBT, commented: *"Whilst the Company is still considering direct mining, a more immediate and less capital-intensive approach is to exploit mining revenue with an existing BTC miner, who would be allowed, under*

licence, to adopt the Company's Method "B" control software. The Company is currently exploring this route.

"We are engaged in an extremely demanding R&D effort to deliver competitive results. The amount of information processed to achieve these goals is huge, searching and analysing regularities in data spaces of large orders of magnitude. Verification testing on hypotheses of discovered regularities is extremely demanding, hence the disparity of the timing of results confirmation between a discovery and its confirmation.

"I am therefore very pleased that despite the long verification time this approach is taking, such regularities and correlations have been identified. Moreover, the ability to control commercial ASIC mining chips with our Machine Learning methods, could provide a tactical shortcut to generate revenues. This will allow us to continue with our proprietary ASIC chip design and work on our Quantum Computing algorithm, pending the availability of quantum computers with enough qubits to run our software.

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About Quantum Blockchain Technologies Plc

QBT (AIM: QBT) is an AIM listed investment company which has recently realigned its strategic focus to technology related investments, with special regard to Quantum Computing, Blockchain, Cryptocurrencies and AI sectors. The Company has commenced an aggressive R&D and investment programme in the dynamic world of Blockchain Technology, which includes cryptocurrency mining and other advanced blockchain applications.

Glossary of Terms

ASIC: An Application-Specific Integrated Circuit is an integrated circuit chip customized for a particular use, rather than intended for general-purpose use. ASIC chips are typically fabricated using metal-oxide-semiconductor (MOS) technology, as MOS integrated circuit chips.

FPGA: A field-programmable gate array is an integrated circuit designed to be configured by a customer or a designer after manufacturing – hence the term "field-programmable". The FPGA configuration is generally specified using a hardware description language (HDL), similar to that used for an application-specific integrated circuit (ASIC).

GPU: A graphics processing unit (GPU) is a computer chip that renders graphics and images by performing rapid mathematical calculations.

Hash: A hash is a mathematical function that converts an input of arbitrary length into an encrypted output of a fixed length.

SHA-256: Secure Hashing Algorithm (SHA)-256 is the hash function and mining algorithm of the Bitcoin protocol, referring to the cryptographic hash function that outputs a 256 bits long value.

Qubit: A classical bit can be in two states, it can be either zero or it can be one. A quantum bit or qubit, however, can be in a sort of zero state and in a one state at the same time. This situation is called a superposition of (quantum) states. Qubits have some very particular properties: for instance, it is not possible to make copies of qubits