13 March 2024

Quantum Blockchain Technologies Plc
("QBT" or "the Company")

R&D and Business Update

Quantum Blockchain Technologies (AIM: QBT), the AIM-listed investment company focusing on a R&D and investment programme within blockchain technology, is pleased to provide an update of its recent R&D activities in the development of its disruptive Bitcoin mining technologies.

New Development: Method C

- Method C – a new development based on Machine Learning and using predictive Artificial Intelligence ("AI") oracle technology is producing consistent results during testing.
- Method C in testing environments has favorably demonstrated predictive ability in c. 30% of the cases, if an input to SHA-256 will produce a winning hash, resulting in a potential saving of energy.

Laboratory testing of a new Machine Learning Method applied to SHA-256 computational optimisation, Method C, is nearing completion. Consistent results have been achieved over the last few months, which confirm the performance of this new QBT proprietary predictive AI oracle, based on neural networks and other Machine Learning methods.

The fundamental feature of Method C is its ability to predict whether an input to SHA-256, the core algorithm for Bitcoin mining, is likely to generate a winning hash, or not. The underlying assumption for Method C is that an oracle decision is materially less computationally demanding than the SHA-256 calculation for the same input string.

The current average predictive performance of Method C in a testing environment is nearly30% , meaning that SHA-256 will avoid processing an input when the oracle will assess, within the current block, or the adjacent future Bitcoin blockchain blocks, that it is highly unlikely to generate a winning hash, namely almost 30% of the times. The Company believes this achievement to be a major technical advancement for the SHA-256 algorithm, and therefore for the Bitcoin mining industry.

The Company is currently in the process of assessing projected overall cost savings to end users of Method C particularly given that, in order to execute Method C, the ASIC chip must run additional logic gates in conjunction with SHA-256. It is believed that through reduction of the number of SHA-256 computations by almost 30%, additional energy saving costs will be made despite the energy used by the oracle.

Method C differs from previously reported QBT's Methods A and Method B in that the former needs to be directly implemented onto the ASIC chip at the manufacturing stage, whereas Methods A and B can be supplied to already existing miners as a SaaS product.

In parallel, following recent lab results, the Company is also evaluating the use of Method C in conjunction with second patent application technology (which itself is the subject of a current patent application) that could avoid the need of such hardware implementation on an ASIC chip, in order to operate Method C.

Business Developments

- The Company has entered into early-stage exploratory discussions with Bitcoin rig manufacturers and US Bitcoin mining companies.
- The Company believes that these discussions represent the first steps towards entering into commercial and technical negotiations.

The Company has, over the past nine months, entered into early-stage exploratory discussions, under Non-Disclosure Agreements ("NDA"), with two large mining rig manufacturers in China and North America and with two of the largest US Bitcoin mining companies. The board believes that these discussions represent the first steps towards entering into commercial and technical negotiations with the largest players in both the Bitcoin mining market and in the Bitcoin mining rig manufacturing industry.

QBT Proprietary ASIC chip

- The Company has commenced development of a proprietary ASIC chip. A working prototype is about to undergo development which will confirm performance levels.

The Company has started a process to design and build a proprietary ASIC chip for Bitcoin mining. Initial chips will be designed in an established process node during the testing phase. The prototype will implement the proprietary optimised version of SHA-256, as per the Company's two patent applications (i.e., ASIC UltraBoost and ASIC EnhanceBoost) as well as the new Method C. It is expected that a working prototype will confirm the architecture feasibility and performance of this new QBT proprietary intellectual property.

Once manufactured, the chips will not be used for industrial Bitcoin mining, instead they will be utilised as an affordable real-world proving ground for QBT's disruptive Bitcoin mining technology. The Company believes that by creating its own chip it will be better situated to construct its new architecture from the ground up. The Company has decided to facilitate this development with a mature process node chip due to its lower manufacturing costs rather than for example, a market-leading 5nm prototype ASIC, which would cost nearly £2m.

Update on the Porting of Method A and Method B onto commercial mining rigs

- The porting of Method A and Method B onto commercial rigs has proven to be very challenging. The R&D team is currently testing different solutions for the final stage in order to deliver a fully reliable product.
- An exact date for market roll-out cannot be provided at this stage.

In the latter part of 2023, the Company selected two target mining rigs for the porting of Method A and Method B including a Chinese machine based on the BM13XX family of ASIC chips.

Transferring the Company's documented laboratory test results, in particular Method B, to use in conjunction to a commercial ASIC chip, has proven to be challenging and further work is currently ongoing. Due to the very specific, architectural choices in the Chinese manufacturer's design of BM13XX chips along with no formal collaboration between QBT and the manufacturer, the Company first needed to understand the architecture of the chip and how to best implement Methods A and B. The R&D team is testing different solutions for this final stage in delivering the product, however the exact date of delivery cannot be provided at this stage.

In addition to the above, the development of Method B, as an extension to CGminer, a standard operating system used by almost all commercial mining rigs, has been particularly complex, given the intricacies of more than 50,000 lines of open-source C-code developed by the CGminer community. The key issues have been addressed and the Company is performing intensive live mining tests 24/7 using ASIC-based Bitcoin mining devices connected to two large mining pools.

Patent Applications

- The Company is making positive headway with its first two patent applications.
- A third patent application is being drafted for the proprietary quantum version of SHA-256.

The Company's first patent application (ASIC UltraBoost) has now been filed with the European Patent Office, while the second patent application (ASIC EnhancedBoost) is going through a standard exchange of questions and answers with the UK Patent Office.

A third patent application is being drafted for the proprietary quantum version of SHA-256 and will be submitted as soon as practical.

Francesco Gardin, CEO and Executive Chairman of Quantum Blockchain Technologies commented: "*The exceptional lab results achieved with Method C represent further evidence that QBT's approach, of applying advanced AI and Machine Learning techniques to improve the SHA-256 algorithm performance for Bitcoin mining, is correct. All of the Company's current efforts are now focused on turning Methods A, B and C, into commercial products. This has proved a very time consuming, due to the tremendous reverse engineering efforts involved in using totally undocumented third-party ASIC chips.*

"All of the large North American and Chinese Bitcoin mining and chip manufacturing companies with whom QBT has engaged, are waiting for the results of our live tests, in particular with Method A and B, using currently available commercial mining rigs, before we can move to the commercial stage As announced on 20 October 2023, we can confirm that Method A and B have been redesigned to be technically available as a SaaS client-server cloud application."

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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.

ASIC EnhancedBoost: The Company's second patent application, as announced on 24 July 2023. For further information, visit

quantumblockchaintechnologies.co.uk/patents-ip

ASIC UltraBoost: The Company's first patent application, as announced on 30 September 2021. For further information, visit quantumblockchaintechnologies.co.uk/patents-ip

Bitcoin Mining: Bitcoin mining is the process of using computer hardware to do mathematical calculations for the Bitcoin network in order to confirm transactions. Miners collect transaction fees for the transactions they confirm and are awarded Bitcoins for each block they verify.

Block: Blocks are found in the Bitcoin blockchain. Blocks connect all transactions together. Transactions are combined into single blocks and are verified every ten minutes through mining. Each subsequent block strengthens the verification of the previous blocks, making it impossible to double spend Bitcoin transactions.

BM13XX: ASIC Family for Bitcoin mining chips manufactured by a very large Chinese manufacturer of mining rigs.

C: Is a general-purpose very popular programming language.

CGminer: Is the most popular software system for GPU/FPGA/ASIC based miners. CGminer is an open-source GPU miner written in C available for several platforms like Windows, Linux and OS X.

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

Hash rate: The hash rate is how the Bitcoin mining network processing power is measured. In order for miners to confirm transactions and secure the blockchain, the hardware must perform intensive computational operations which is output in hashes per second (THs is tera hashes per second).

Nanometer (nm): A nanometer is a unit of measurement that is equivalent to one billionth of a meter. It is widely used as a scale for building tiny, complex, and atomic-scale computing and electronic components, such as ASIC chips.

Neural networks: A neural network is a machine learning program, or model, that makes decisions in a manner similar to the human brain, by using processes that mimic the way biological neurons work together to identify phenomena, weigh options and arrive at conclusions.

Oracle: It is an intelligent system which is designed for only answering questions and has no ability to act in the world.

Porting: In computer science, it is a process of adapting, sometimes with modifications, a software component to enable its use on a platform different from the original one. Porting is done when the software is somehow adjusted, not when the source code is completely rewritten in a different programming language.

Process Node: In the semiconductor industry, a technology node, also known as a process node, process technology, or simply node, is a specific semiconductor manufacturing process and its design rules. Different nodes usually mean different circuit generations and architectures.

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.