



BLOCKCHAIN TO NEW GENERATION

The new ICT paradigm

September 2018



Executive Summary

- A Spin-Off company of ***Rfintech Group***.
- Creation of a new BLOCKCHAIN concept (New Generation) based on Dynamic Neural Networks via Quantum Measurement (QM).
- To develop & manufacture of a new quantum processor based on Dynamic Neural Networks.
- European Patent Registered (application nr. EP18382638.7) – Aug 31st 2018.



Register
SWI



Register
SP



Description

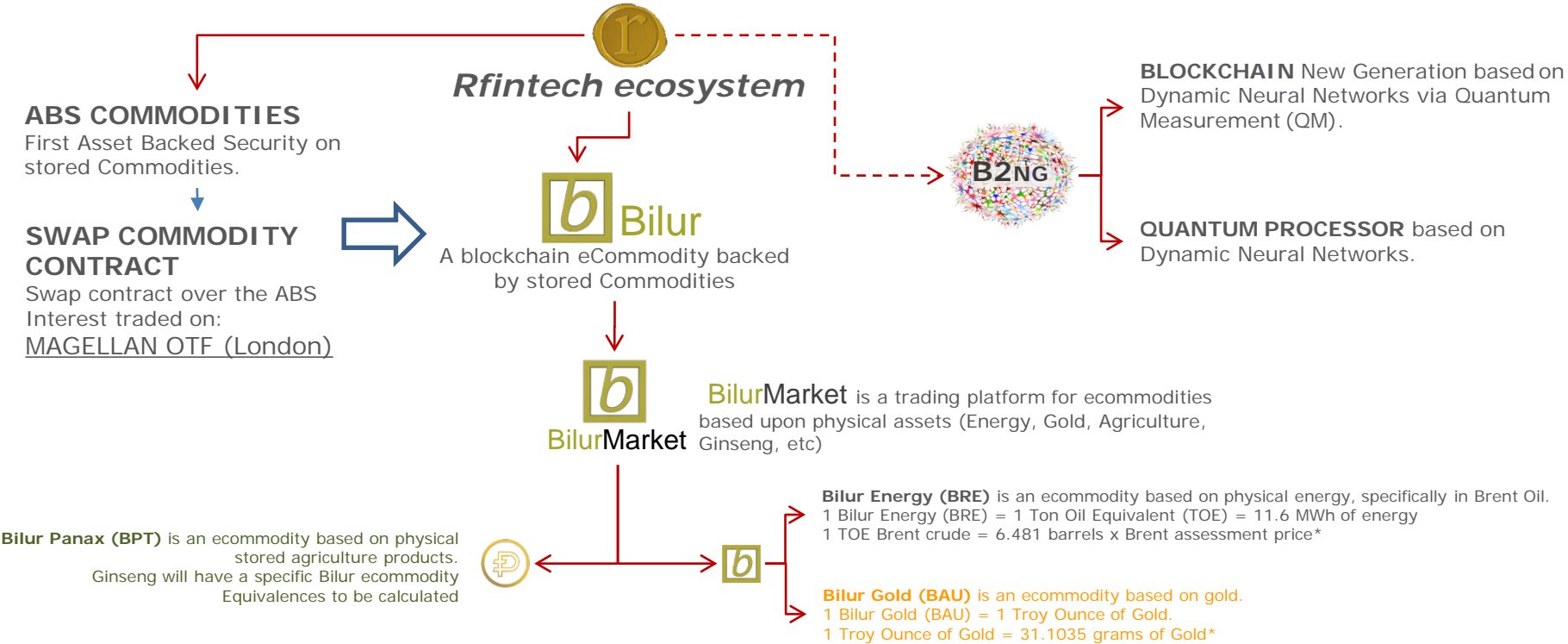


Drawings



Rfintech in a nutshell

R Fintech → design, development, implementation, maintenance and promotion of financial tools and services based on new technologies.





Context and key challenges

Context

Current Blockchain (weaknesses & status)

- **Cryptography** – Public / Private Key (elliptic curves)

Based on the algebraic structure of elliptic curves over finite fields

Problem to be solved: "Elliptic Curve Discrete Logarithm Problem" (ECDLP)

Shor's algorithm can be used to break elliptic curve cryptography by computing discrete logarithms on a quantum computer. The latest quantum resource estimates for breaking a curve with a 256-bit modulus (128-bit security level) are 2330 qubits

- **Information Processing**

Turing Engine (complete) -> Sequential -> Von Neuman Architectures etc..

New applications of Artificial Intelligence run on Artificial Neural Networks (Parallel Processing) architectures

- **Consensus** – Notary Needed, PoW, PoS, etc...

Problem – To find "ONE" honest man to trust -> Impossible (Math – Byzantine Generals' Problem)

Key challenges

- Intellectual property (IP) development.
More patents to be filed to support:

- a) Quantum circuit manufacturing details.
- b) Solutions to "unsolved" problems with classical computers
- c) Blockchain new generation architecture and features.

- Physical implementation of the new Quantum Circuit.
Microwave circuit to be developed with last State of Art

- Technical team
Partnership with the leading technological companies worldwide

- Company acting in the three "leading" technology innovation fields:

- i. Blockchain
- ii. Quantum Computing
- iii. Neural networks



Project objective and subsequent targets

Objective

- The goal of the company is Dual:
 - To develop and test the new blockchain architecture
 - To build up a physical Quantum Circuit based on the patent filed

Subsequent targets

- New Blockchain architecture based on DYNAMIC NEURAL NETWORK (DNN)
Change the paradigm of Artificial Neural Networks (ANN) to Dynamic vs. Static (Current Status)
Each Node of the DNN is $f(t)$ not only $f(\text{input})$ as in the ANN. The $f(t)$ is constructed via a Fourier Transform. DNN as support for :
 - a. Quantum Cryptography
Public/Private -> Asymmetric -> Symmetric
Transmission fully secure of Private Key with one key per Transaction. Optical Photon Cryptography.
Unique Book Crypto Theory is 100% Math -> Secure. Property DNN/ QIP – Entanglement
 - b. Neural Network Processing
Deep Learning . Next Step “Dynamic”
Information Representation : 100% accurate even in $n - \infty$ (infinity) in Parametric Information Spaces From Smart Contracts to Intelligent Contracts
- To build a quantum computer with a 2,000 qubit (Quantum Circuits) capacity. As a reference, the most powerful quantum processor is being developed by Google and IBM with a 50 qubit capacity. Our quantum computer will have the capacity to decipher encrypted private keys based on RSA and Elliptic curves algorithms. This represents a major threat for all the Cryptocurrencies currently developed.



Scope of the Company

Subsequent targets

- CREATION OF THE BLOCKCHAIN VIA QUANTUM MEASUREMENT (QM)
Block -> Engram / Chain -> Memory
QM -> Irreversible Mechanism vs Reversible Operation of information quantum processes
No need of any Trusted Party. The information processing mechanism in the DNN is in the edges of the net not in the nodes.

Functional scope

- Creation of a DNN (Dynamic Neural Network) architecture
- Creation of a Blockchain (New Generation) via Quantum Measure (QM)
- Creation of a Quantum Information Processor (method and an apparatus) based on Dynamic Neural Networks

Geographical Scope

GLOBAL
Main blockchain developments in Europe and America: financial and utility networks and those that require high standards related to cybersecurity

Sector scope

- Information services (i.e. Google) and Intelligence services (i.e. NSA)
- Financial institutions that require a high degree of security in their transactions
- Utilities companies
- Players in the cybersecurity market
- Those who need a high-performance quantum simulation (i.e. development of new proteins and materials)



Interfaces, Risks & comments

Implementation

- RFintech - Blockchain 2 New Generation S.A. -> Switzerland
 - Initial Capital required – 15% -> £3 M
 - 3-10 Partners – Financial Institutions (Venture Capital Funds)
 - Ticket size -> £0.3M – £1M
 - CAPEX (£3M):
 - HR & TR (1 year): £1M
 - Patents & IP rights: £2M
 - Private investors to be allowed in parallel up to a max 5% - Subject to specific conditions
 - Project launching -> September 2018
- Resources, Research & Allocation
 - Objective: Find Industrial partners USA, Europe, Eurasia, China
 - Develop Business Model with each partner/region
 - Build-up the HW – SW with each partner/region
 - Money/Resources Goal – Min £50M – Max. £200M -> T+3 months (Dec. 2018)
- **B2NG** Development
 - Technical – Universities + CERN(Geneva). Board of Advisors
 - Marketing – Presentations to Financial Institutions -> 6 Months (Jul. 2019)
 - Research USP: NEW ERA IN CYBERSECURITY
 - The playground has changed.



Interfaces, Risks & comments

Interfaces and related projects

- R Fintech financial products and markets (Bilur, Magellan OTF)
- New SECURE networks for financial products (SWIFT)
- New infrastructure for Exchange Markets

Risks related to the project

- Over costing (poor funding)
- Technical limitations to produce HW and to develop full SW suites.
- Patent violations by partners or 3rd parties
- Big market players as potential allies/competitors

Any other comments

- Potential partners: China, Russia (besides to western partners)
- New ICT paradigm.
- Third ICT generation (Mainframe -> Microprocessor -> Quantum/Neural network Computer)



SWOT analysis

STRENGTHS

- European patent on a revolutionary system of information processing
- CEO with an outstanding track record in the research and international commerce fields
- Relationships with global big industrial and academic partners: Fongit, Platinn, AltPic (Switzerland), JBI (China), Rostec (Russia)

WEAKNESSES

- Lack of market consciousness about computing revolution (Quantum, Neural Networks, Blockchain)
- New product development with consequent technological barriers

OPPORTUNITIES

- Change of paradigm related to cybersecurity, crypto currencies and other fields needing a strong computing power.
- Beginnings of the quantum computing era.
- New era in ICT

THREATS

- Big IT market players (i.e. Google, Amazon, etc) already working in similar developments.
- Risks related to the physical/industrial manufacturing of hardware
- Choosing the right partners (patent violations)



Time plan



Time	1 months	6 months	12 months	12 months
Activities	<ul style="list-style-type: none"> ▪ BNG Architecture ▪ QIP industrial partners ▪ IP preparation 	<ul style="list-style-type: none"> ▪ BNG Development ▪ QIP Manufacture & Tests ▪ IP filing 	<ul style="list-style-type: none"> ▪ BNG Deployment ▪ Quantum Computers based on QIP ▪ IP support 	<ul style="list-style-type: none"> ▪ Sectorial Partners ▪ Market partners (Google, IBM, Microsoft, etc.) ▪ Patent negotiation
Deliverables	<ul style="list-style-type: none"> ▪ Detailed BNG Architecture. ▪ Industrial partners contracts. ▪ Overall Business Plan 	<ul style="list-style-type: none"> ▪ BNG prototype ▪ QIP as an Industrial product. ▪ Organizational and Financial Company structure. 	<ul style="list-style-type: none"> ▪ BNG Scale up ▪ Quantum Computers as commercial products ▪ Company development. 	<ul style="list-style-type: none"> ▪ BNG deployed in different sectors. ▪ Quantum Computer applications. ▪ Company Growth.



Resources

✓ Register IP protection



✓ Project Design & develop



Manufacture & Deploy



Funding



Technical

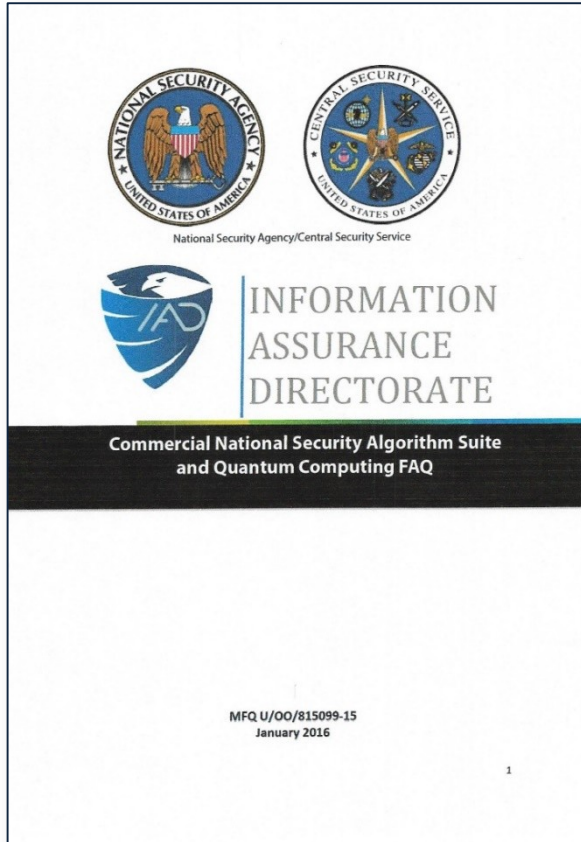


Human





Next Steps



TIME TO ACT IS NOW

Page 6.

Question: What is the threat if a Quantum Computer were developed?

Answer: A sufficiently large quantum computer, if built, would be capable of undermining all widely deployed public key algorithms used for key establishment and digital signatures.