CryptoBLK

Andrew Hon
Founder, Chief Technology Officer

Mission: *Revolutionize FinTech with Cryptography and Blockchain*

December 2019

CryptoBLK

- Founded in 2017. Headquarter in Hong Kong with Singapore and Thailand offices.

- All founding members were from the Applied Science and Technology Research Institute (ASTRI), the largest R&D center in Hong Kong.

- Duncan Wong, CEO
  - PhD in Computer Science, Northeastern University, Boston, MA, USA
  - Research in cryptography
  - 12 years professor (tenured) at the City University of Hong Kong
  - Co-inventor of Linkable Ring Signature used in privacy coins such as Monero (XMR, Rank 13) and CryptoNote
  - 200+ research publications in cryptography and cyber-security

- Andrew Hon, CTO
  - Master in Info Sys Management and BSc in Computer Science, University of Minnesota
  - Head of Blockchain Core Competence Group at ASTRI from 2015 – 2017
  - 20+ years of software development and management experiences in HK and USA

CryptoBLK

CryptoBLK is a Blockchain / Distributed Ledger Technology (DLT) solution provider. It has the complete set of DLT software development, project management, deployment and 24x7 operation capabilities.

- Trade Finance, Supply Chain Finance
- InsurTech (Insurance Technology)
- Central Bank Digital Currency (CBDC)
- Payment and Settlement (e.g. Delivery-vs-Payment, Bond Repo)
- Property / Asset Management and Valuation (PropTech)
- Crypto-tokens

CryptoBLK focuses on

- Industry-wide consortium DLT application development, deployment, and business network operation,
- Customized and specialized DLT system development and consultancy, and
- 24x7 DLT network operation and support.

How we began…

The CryptoBLK Team published a Whitepaper on Distributed Ledger Technology in 2016 under the commission of the Hong Kong Monetary Authority (HKMA) before spinning off from the Hong Kong Applied Science & Technology Research Institute (ASTRI).

- HSBC open account trade finance prototype, Eris Industries, Ethereum
- Bank of China (Hong Kong) property valuation DLT system in production, Eris Industries, Ethereum
- HKMA eKYC prototype, Hyperledger Fabric

ASTRI

Whitepaper On Distributed Ledger Technology

11 Nov 2016

Commissioned by

HONG KONG MONETARY AUTHORITY
香港金融管理局

CryptoBLK

- Apexa, Formerly known as Voltron, is a blockchain-based open industry platform to create, exchange, approve, and issue Letters of Credit on Corda, R3's blockchain platform.

- CryptoBLK is responsible for building the CorDapp, hosting the platform, and supporting individual banks and participating corporates on running Corda nodes and the CorDapp.

- Apexa platform will go into production in 2019.

8 Founding Member Banks

Bangkok Bank · HSBC · SEB · CTBC BANK · BNP PARIBAS · NatWest · ING BANK · Standard Chartered

Participating Corporates

Cargill · RioTinto · TRICON ENERGY · BM · Reliance Industries Limited · GC MARKETING

Solution Delivery Partners

CryptoBLK · r3. · BAIN & COMPANY

3rd Party Collaborators

Bolero · essDocs · Microsoft

CryptoBLK

- Atlas is a blockchain-based open account trade finance platform with a unique and powerful **financing composer**.

- We serve commercial banks, shipment companies, carriers, factoring companies, sellers / suppliers, and buyers.

- Key features: financing composer, corporate credit rating, hybrid deployment ready, marketplace.

- Atlas is solely built by CryptoBLK, with versions for both R3 Corda (open source and enterprise) and Hyperledger Fabric.

ATLAS

CryptoBLK

- MIDAS – Motor Insurance DLT-based Authentication System
- Jointly developed with the Hong Kong Federation of Insurers.
- Full support from Hong Kong government's Insurance Authority, and currently used by
  - Transport Department
  - Hong Kong Police Force
  - Insurance companies
  - Sub-agents / intermediaries
  - Car owners
- CryptoBLK is the designated DLT system developer and business network operator.
- Privacy by Design: no personal identifiable information, thanks for patent-pending cryptographic methods invented by CryptoBLK.
- MIDAS was developed by CryptoBLK and is currently running on a Corda open source based DLT platform hosted by CryptoBLK.

MIDAS

In Dec 2018, the Hong Kong Federation of Insurers (HKFI) together with CryptoBLK launched a DLT-based real-time motor insurance authentication system, of which the Transport Department and insurance companies in Hong Kong are users.

HKFI

香港保險業聯會
The Hong Kong Federation of Insurers

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Insurance Companies
1. Allied World Assurance
2. Asia Insurance
3. Bank of China Group Insurance
4. Blue Cross (Asia-Pacific) Insurance
5. Chevalier Insurance
6. China Merchants Insurance
7. China Ping An Insurance (Hong Kong)
8. China Taiping Insurance (Hong Kong)
9. Dah Sing Insurance
10. Falcon Insurance Company (Hong Kong)
11. MSIG Insurance (Hong Kong)
12. Pacific Insurance
13. Prudential General Insurance
14. Sompo Insurance (Hong Kong)
15. Target Insurance
16. Tokio Marine and Fire Insurance
17. Trinity General Insurance
18. Tugu Insurance
19. Well Link General Insurance
20. Zurich Insurance

Sub-agents
Inchcape Mobility Limited
Wellsmart Insurance Managing Ltd

MIDAS

HKFI
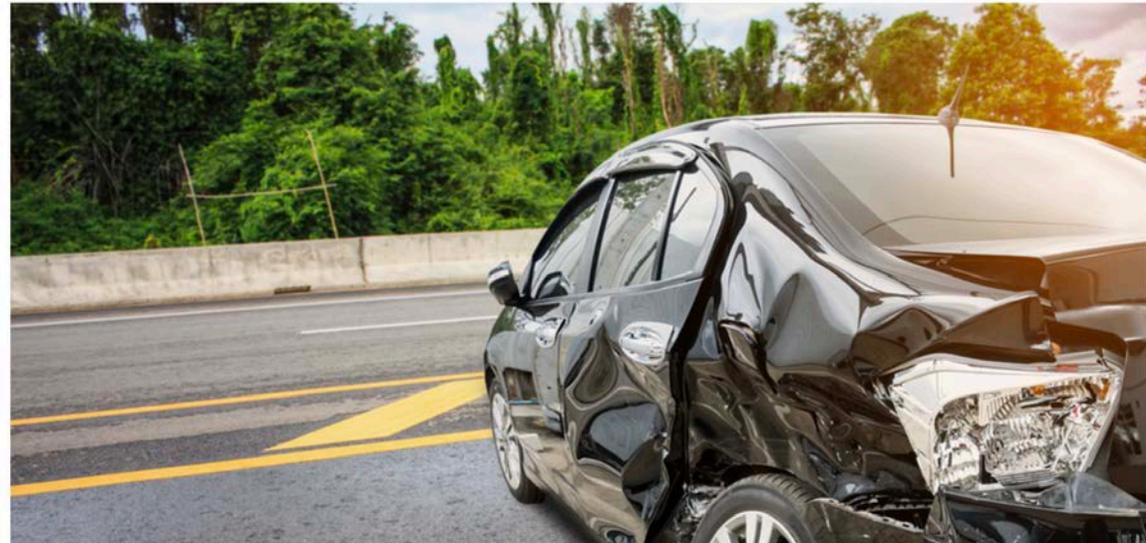香港保險業聯會
The Hong Kong Federation of Insurers

COMPUTERWORLDHK
HONG KONG'S SOURCE OF IT INSIGHT

IT In HK   IT Infrastructure   Digital Transformation

IT in HK

CryptoBLK, HKFI use blockchain to fight motor insurance fraud

by Dylan Bushell-Embling | Dec 19, 2018 8:00am

Project Inthanon

Central Bank-issued Digital Currency (CBDC), relevant projects include Jasper, Ubin, etc.

- Bank of Thailand & HKMA
- R3: project management
- CryptoBLK is the technical solution provider and technical consultant, together with CH&Co.
- Digital assets, currencies, securities, for streamlining settlement and cross-border payment related workflows, e.g. DvP, Repo, Multi-asset Liquidity Saving Mechanism (MLSM), etc.

Banking ▸ 'Project Inthanon': Thailand Will Trial Central Bank Digital Currency

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ntral Bank Digital Currency

Project LionRock-Inthanon

"
Transforming wholesale cross-border payments with streamlined intermediation model, real-time transfers and atomic Payment-versus-Payment (PvP) settlements
"

The new model will:

- ✓ Improve cross-border settlement efficiency
- ✓ Improve liquidity management efficiency
- ✓ Comply with local regulations
- ✓ Allow for wider scope with extensible architecture

For further details, please refer to the **joint HKMA-BOT report** to be released in **Q1 2020**.

Participating Organizations:

Hong Kong

HSBC — Z A

Thailand

Bangkok Bank ธนาคารกรุงเทพ — Krungthai กรุงไทย — krungsri กรุงศรี

ธนาคารกสิกรไทย KASIKORNBANK — SCB ไทยพาณิชย์ — ธนาคารธนชาต

Standard Chartered — HSBC

Powered by:

r3. — CH & Co. —

GET IN TOUCH

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HONG KONG MONETARY AUTHORITY
香港金融管理局
Project LionRock

ธนาคารแห่งประเทศไทย
BANK OF THAILAND
Project Inthanon

Leveraging Distributed Ledger Technology (DLT) to Increase Efficiency in Cross-Border Payments

Source: HKMA Leaflet

Project Inthanon

ธนาคารแห่งประเทศไทย
BANK OF THAILAND

Led by the Bank of Thailand (BOT), Project Inthanon explores the feasibility of DLT to enhance Thailand's financial infrastructure as well as to encourage collaborative learning among involved parties.

In collaboration with R3 and eight participating banks, the project aims at developing a proof-of-concept for domestic wholesale funds transfer using Central Bank Digital Currency (CBDC).

1 Phase 1: Building the Fundamentals (2018)
- Tokenisation of Cash & Bond
- Gridlock Resolution
- Automated Liquidity Provision

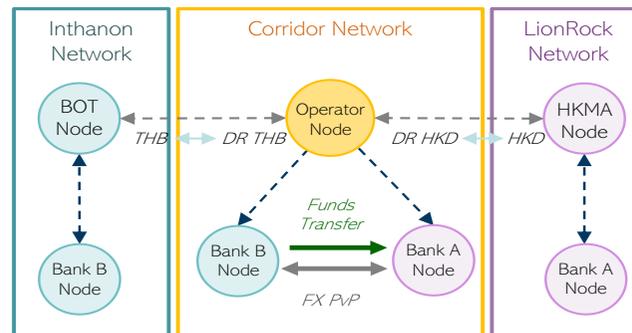Phase 1 Report

2 Phase 2: Enhancing Functionalities (2019)
- Bond trading, life cycle management, & DvP for interbank repo
- Data reconciliation & compliance

Phase 2 Report

STRATEGIC COLLABORATION

Project LionRock-Inthanon explores real-time cross-border transfers and FX payments via a corridor network to achieve atomic PvP with reduced settlement layers.

--→ Transfer of tokens   DR: Depositary Receipt

Explore Cross-Border Funds Transfer Models (2019)

Cross-Border Funds Transfer: Conduct interbank & international transfer instantly.

Liquidity Mechanism: Enable on-demand FX liquidity management functions.

Regulatory Compliance: Monitor HKD/THB wallets & transactions. Verify compliance with Thai regulations.

Project LionRock

HONG KONG MONETARY AUTHORITY
香 港 金 融 管 理 局

Project LionRock is driven by the Hong Kong Monetary Authority (HKMA) to research the benefits and risks of CBDC, which includes a proof-of-concept study on token-based CBDC and debt securities issued into a single DLT system.

In collaboration with the three note-issuing banks, the Hong Kong Interbank Clearing Ltd. and the R3 consortium, the project explored a two-tier issuance model to allow corporates to hold and utilize CBDC tokens as sponsored participants of their banks.

Scope of Project LionRock (2017)
- DLT evaluation for CBDC issuance, bond tokenisation, and DvP
- Potential service extension to new participants
- Transaction traceability evaluation for compliance
- Overall CBDC evaluation as a payment system

Source: HKMA Leaflet

TOPAZ – A Property Management and Valuation DLT Platform
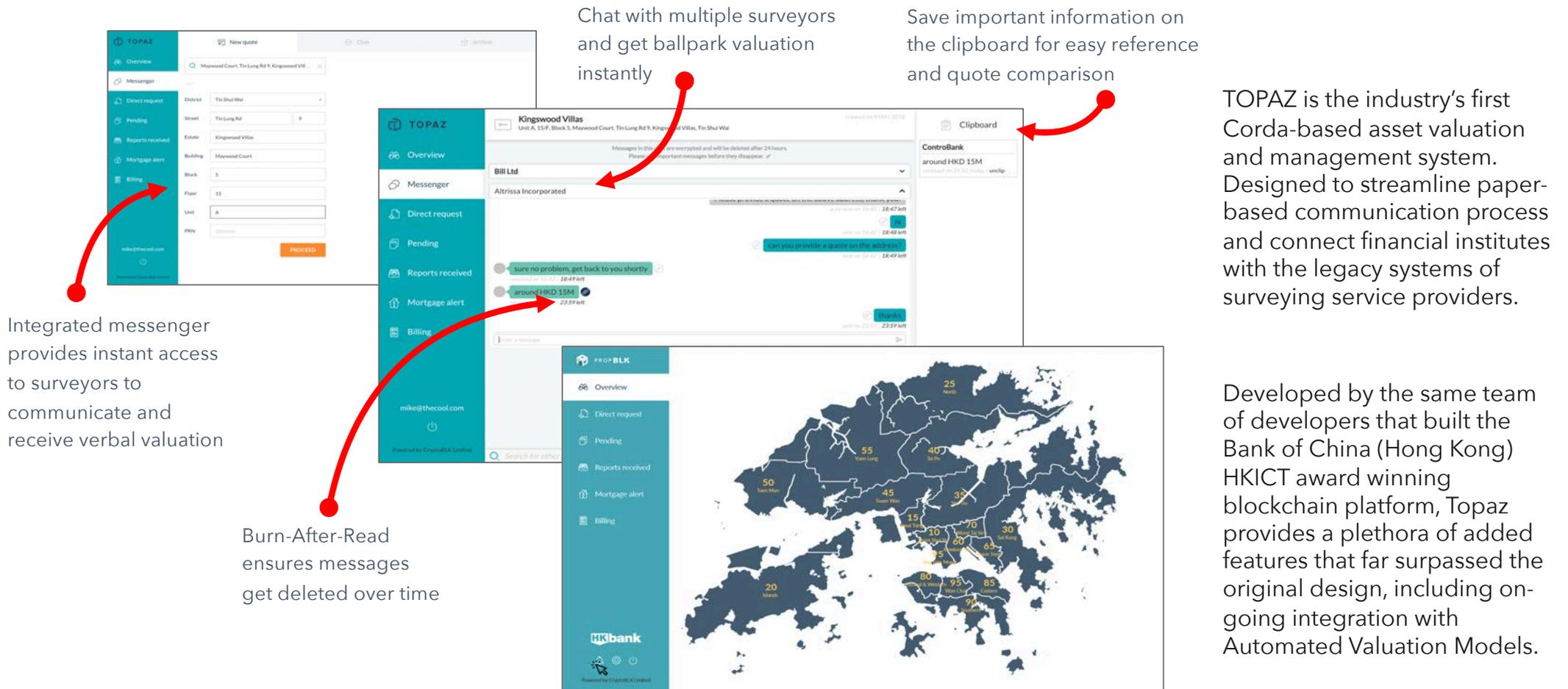
Chat with multiple surveyors and get ballpark valuation instantly

Save important information on the clipboard for easy reference and quote comparison

Integrated messenger provides instant access to surveyors to communicate and receive verbal valuation

Burn-After-Read ensures messages get deleted over time

TOPAZ is the industry's first Corda-based asset valuation and management system. Designed to streamline paper-based communication process and connect financial institutes with the legacy systems of surveying service providers.

Developed by the same team of developers that built the Bank of China (Hong Kong) HKICT award winning blockchain platform, Topaz provides a plethora of added features that far surpassed the original design, including on-going integration with Automated Valuation Models.

CryptoBLK

Cerberus – a Blockchain / DLT platform and application monitoring and alerting system

- A DevOp's tool for monitoring the healthiness and performance of DLT platforms and applications.

- Major consortium DLT infrastructures supported:
  - R3 Corda, both Enterprise and open source
  - Hyperledger Fabric

- Major DLT deployment and hosting environments supported:
  - Cloud environment, e.g. AWS, Azure, and other major cloud solution providers
  - On-premises (e.g. financial institutions' own data centers)

- Two usage models: **Cerberus Cloud** and **Cerberus On-Premises**

- Major features:
  - Real-time healthiness monitoring and alert of DLT nodes and infrastructures
  - Real-time monitoring and alert of related components, e.g. web servers, API gateways, database systems, etc.
  - DLT application exceptions alert and application log monitoring

- Also support performance monitoring – CPU/memory load, JVM metrics, flow rate, etc.

- Alert triggering – system failure, disk full, failover, etc.

DLT projects using Cerberus Cloud

- Voltron – a global letter-of-credit trade finance DLT platform

- MIDAS – a Hong Kong motor insurance DLT-based authentication system

- Atlas – an open-account trade finance DLT platform
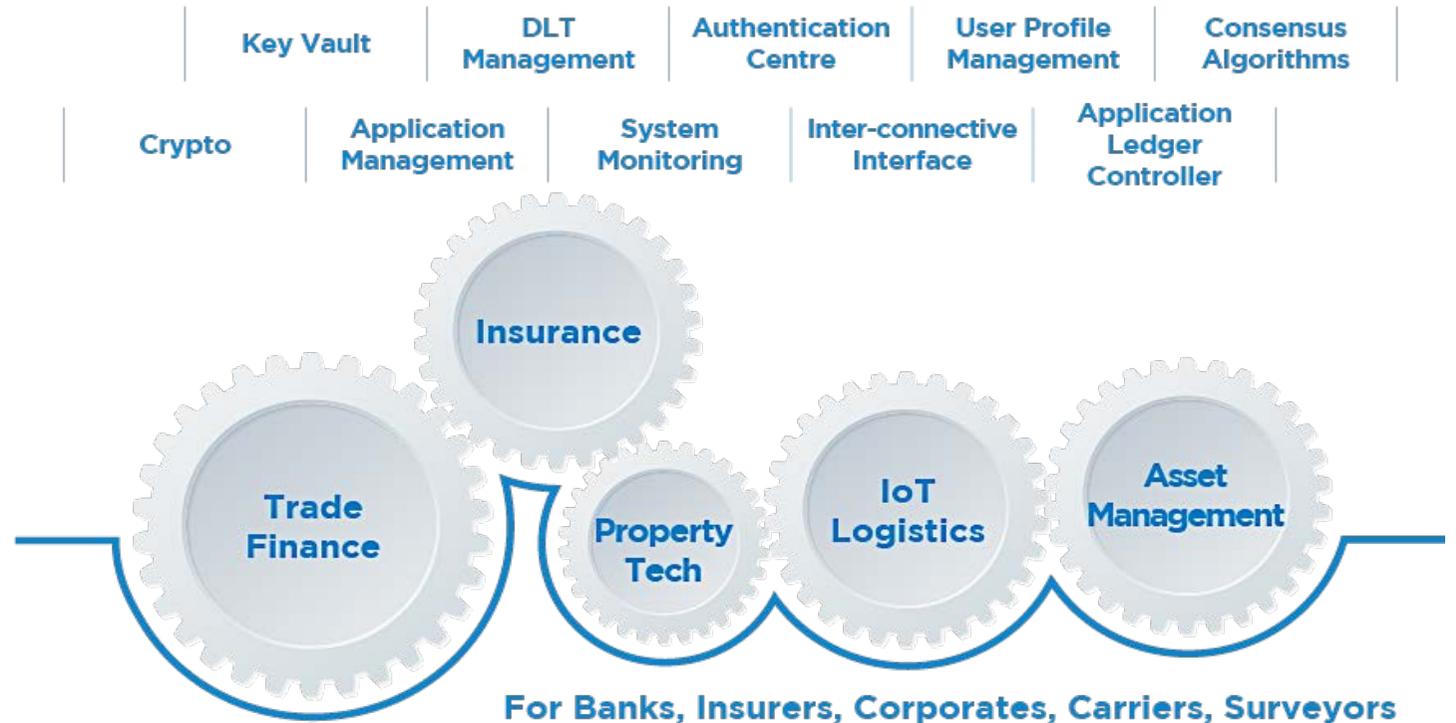
Cryptocurrency Technology – Abelian Coin

Quantum-Resistant Cryptocurrency Balancing Privacy and Accountability

https://abelianfoundation.org

- A post-quantum cryptocurrency platform being jointly developed by CryptoBLK, Nanyang Technological University (NTU), Shanghai JiaoTong University (SJTU), and University of Wollongong.

- Full privacy based on post-quantum Linkable Ring Signature, cryptographic commitment schemes, and zero-knowledge proofs.

- Support regulatory monitoring by using Verifiable Encryption to allow authorities to link and trace crypto-tokens over transaction flows.

CryptoBLK

- CryptoBLK's global cross-cloud, cross-platform DLT platform.

- Support Amazon AWS, Microsoft Azure, and other cloud hosting simultaneously.

- Support both cloud and on-premises deployment simultaneously.

- Support multiple applications include trade finance (Voltron, Atlas), asset valuation and management (Topaz), InsurTech (MIDAS), logistics, etc.

- 80 nodes globally residing in Hong Kong, Singapore, Korea, North America, and Europe.

Key Vault | DLT Management | Authentication Centre | User Profile Management | Consensus Algorithms

Crypto | Application Management | System Monitoring | Inter-connective Interface | Application Ledger Controller

Insurance

Trade Finance

Property Tech

IoT Logistics

Asset Management

For Banks, Insurers, Corporates, Carriers, Surveyors

Thank You

R3 Technology Partner
AWS Activate Supported
Microsoft BizSpark Partnership
HSBC Blockchain Delivery Partner
Member of HKSTP Incu-Tech Program

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