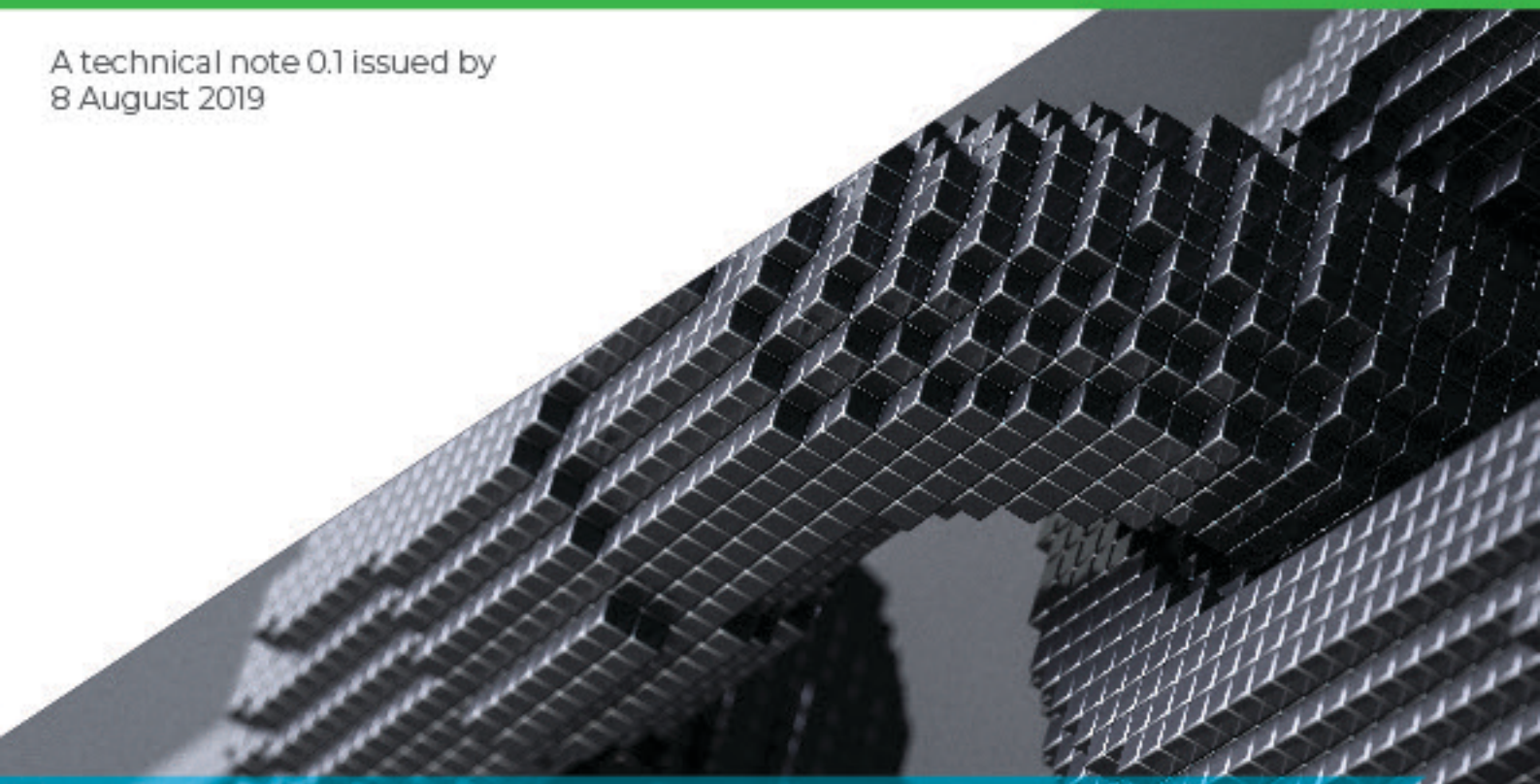
A technical note 0.1 issued by
8 August 2019



ZakatTech
Blockchain Platform

A project by
International Shariah Research Academy for Islamic Finance (ISRA)
&
SYSCODE

ISRA International Shari'ah Research Academy for Islamic Finance
الأكاديمية العالمية للبحوث الشرعية في المالية الإسلامية

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ZakatTech Platform is owned and operated by ISRA and SysCode

About ISRA

The International Shar'iah Research Academy for Islamic Finance (ISRA) was launched in 2008 by Bank Negara Malaysia in an effort to harmonise the academic and industry need for applied research in the area of Shari'ah and Islamic finance. With more than 200 conference presentations and over 100 research papers published, along with published materials distributed to more than 40 countries worldwide, ISRA has been voted the "Best Islamic Research Firm" for the fifth consecutive year by the IFN Service Providers Poll. ISRA is an award-winning academy that aims to be the world's premier Shari'ah research centre in Islamic Finance.

For more information, please visit www.isra.my.

ISRA International Shari'ah Research Academy for Islamic Finance
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About SysCode

SysCode is a cloud software development company based in Kuala Lumpur, Malaysia, and an associate company of Systech Bhd, a publicly listed company in the ACE Market of Bursa Malaysia.
SysCode provides solutions built on proprietary multi-tenanted cloud architecture enabling the deployment of powerful solutions that are able to handle high transaction loads and data volume.
SysCode specialises in applying blockchain technology for real-world industry solutions by utilizing smart contracts and decentralized application architecture. It is able to develop solutions on any blockchain technology including Hyperledger, Ethereum Virtual Machine and other Turing and non-Turing blockchain platforms.

For more information, please visit www.syscode.asia.

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What is Blockchain?

The Blockchain is a decentralized ledger of transactions across a peer-to-peer network. Blockchain technology is built on three main concepts:

- **Decentralized**: There are many copies of the blockchain data and it is distributed geographically across the network, therefore there is no single point of failure or point of attack.
- **Consensus**: Transactions created between two parties require validation and verification by applying a mathematical algorithm to ensure its authenticity before being committed to the blockchain; no human interaction is required.
- **Trustless**: It does not require a central authority or a trusted third party to manage its network; it performs these transactions autonomously based on a transparent set of rules.

Transactions in the blockchain can only be either READ or WRITTEN. Once a transaction is committed into the blockchain, it cannot be manipulated, edited, updated or changed in any way. The transaction exists in the blockchain network… forever. A blockchain implementation creates a 'trusted environment' since these transactions are transparent but anonymous. This means that anyone in the blockchain network can view a transaction, but it is encrypted except to those individuals that are participating in the transaction.

These concepts work together to create immutable blocks of data that cannot be tampered with, making it an extremely secure technology platform.

The blockchain can be further enhanced by the use of 'Smart Contract' technology to build this platform. A blockchain Smart Contract is a set of programmed code which uses blockchain identity encryption and signing technology to self-execute and self-enforce a set of instructions or agreements. A smart contract is deployed *within* the blockchain architecture itself; thus it inherits the properties of a blockchain transaction, making it immutable and tamper proof.

'Blockchain as a Service' to strengthen Shariah compliance

ISRA-Syscode aims to build a blockchain platform to strengthen Shariah compliance. Our blockchain platform is built on a federated blockchain environment powered by Hyperledger blockchain fabric, with its root nodes deployed on Microsoft's Azure Cloud Platform. Our Hyperledger implementation does not require a tokenized environment or any miners to be involved in its transactions. Instead, Hyperledger utilizes endorsement policies whereby pre-identified organizations or peers participate in the validation process. Hyperledger endorsement policies are fully customizable, and we implement different policies based on different types of transactions. This is in line with our objective of enabling the various types of institutions to use blockchain as a service to enhance Shariah compliance.

Our blockchain platform acts as a trust agent in transactions between parties. Each environment is deployed with specific assets and smart contracts that govern how an asset is created and transacted. We focus on developing transaction environments for Islamic financing areas which require a level of security, authentication and traceability.

The transaction environments that we are planning to build include commercial Islamic financing contracts and arrangements such as *murabahah*, *tawarruq* and *wakalah*, and Islamic social concepts such as zakat and *waqf*.

The vision and goal of our blockchain platform is to provide a trusted data environment by adopting the following key principles:

- Provide trusted data on the degree and level of Shariah compliance;
- Implement smart contracts designed for Shariah-compliant verification and workflow validation;
- Use smart contracts as building blocks for different tier/levels of Shariah compliance for different workflows;
- Register assets, track and record transactions, and validate workflows;
- Operate on a federated network, maintained and endorsed by multi-level organization-based Hyperledger environment.
- Third party Interaction with the platform will be facilitated by an API/ABI communication interface layer to enable easy integration with existing systems and applications.

Our first implementation of our blockchain platform will focus on zakat and charitable transactions in a transaction environment aptly named 'ZakatTech'.

ZakatTech Implementation

The purpose of ZakatTech Blockchain is to enable tracking of funds throughout the whole process lifecycle, from the point of donation to distribution of funds.

Transactions are recorded via a custom asset structure which enables tracing and tracking of donated funds at an unprecedented level:

- All recorded transactions are transparent yet securely encrypt the identity of the person(s) participating in the transaction.
- Donors are able to know how much of their donations have been utilized and distributed.
- Transactions are auditable (when granted permission to related government bodies and agencies).

With such levels of transparency and traceability, we hope to increase the confidence of the general public in donating zakat through verified channels. This

would increase the total collection of zakat and its distribution to the needy, and will eventually help to upscale the social economy.

We hope to be able to reduce transaction costs and enable a greater level of efficiency in the whole process of collection and distribution while reducing the rates of system errors, mistakes and fraud.

Stakeholders of ZakatTech

The ZakatTech project is not about introducing another zakat app in the market. It is about enhancing the zakat ecosystem. ZakatTech is a platform which allows different zakat institutions to connect with it. It is not an app by itself; rather, it is a service that enables zakat institutions to use the blockchain platform to record and trace their transactions. Each participating zakat institution will be able to participate via its existing app, though a standard app will be developed by our team. Zakat institutions will also be able to maintain and connect to their own database management systems if they opt to. This will facilitate zakat institutions to manage the zakat proceeds and connect zakat payers and recipients in a more effective and efficient way.

ZakatTech is a flexible platform that enables participating zakat institutions to design and maintain their own processes. They can decide on the components that will be registered on the blockchain platform. Gradual implementation can also be facilitated. The platform is enabled by a multi-organizational structure where data provided or registered by one zakat institution will not be shared with any other zakat institution without their permission.

ZakatTech does not maintain or manage the funds received. Participating zakat institutions will still bear the responsibility in making all decisions related to management, collection and distribution. In essence, the goal of the platform is to provide trustable data for the institutions and their clients. It offers a high level of transparency and no manipulation of transactions after they are registered. Further, it facilitates the work of auditors and Shariah scholars by providing them the necessary data (including, but not limited to the flow of funds). This will further enhance Shariah compliance and strengthen the trust of all stakeholders.

For collaboration and more info, please don't hesitate to contact us:

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