THEKEY

A Decentralized Ecosystem of

An Identity Verification Tool Using National Big-data and Blockchain

White Paper

October 2017

Table of Content

EXECUTIVE SUMMARY

As more and more services and socializing shift from the real world to the online world, identifying each other digitally has become a prominent theme. Development of Identity Verification ("IDV") Technology is one of the most significant trends, which will have a critical impact on the digital economy. However, none of the existing online IDV technologies addresses two fundamental requirements: results generated from online IDV should be undeniable and unalterable.

THEKEY Project is now developing a second-generation IDV solution for the internet via BDMI technology. BDMI stands for "Blockchain based Dynamic Multi-Dimension Identification" technology. Such a solution perfectly echoes the main requirements for identifying each other in the digital world, which is 'The Key' for migrating people from the real world to the online world. BDMI, as the name of it, synergistically combines Dynamic Multi-Dimension Identification ("DMI") technology and blockchain technology. DMI has already passed its development stage and is currently applied to THEKEY' s existing first-generation IDV solutions, which has built a very solid ground work to guarantee the successful development of BDMI,

- 23 copyrights have been obtained, 15 patents have been accepted by SIPO (State Intellectual Property office of the P.R.C) and start attestation process.
- THEKEY' s first-generation IDV solution is currently in use for mobile social insurance pay in two pilot cities, which people can receive their payment for their pension, or healthcare insurance reimbursement. The IDV solution is currently being deployed in another 41 cities, covering more than 130 million people.
- Personal identity data of 210 million people in 66 cities,

authenticated by the relevant government authorities, are connected on a real-time basis. This constitutes a solid foundation of IDV.

- Commercial contracts signed with world-leading firms and the business model of our IDV products in this White Paper have already been partly proven.
- Six relevant national laboratories have been set up together with government agencies, banks, insurance companies and one university.

Along with the development of a second-generation IDV solution, facilitated by token sales, THEKEY Project team will also develop THEKEY Ecosystem for providing IDV services (the "Ecosystem"). THEKEY Ecosystem will consist of three components of participants (Validator, Service Provider and Individual User), Smart Contracts and TKY Tokens (THEKEY Token). The objectives of setting up THEKEY Ecosystem are, 1) to develop a healthy environment where Personal Identity Information ("PII") can be properly used and protected, and 2) to provide a financial incentive to the participants in the Ecosystem.

THEKEY generates IDV results by crosschecking multi-dimensionally with the latest PII, behavior data and scene data. Consider an example case for IDV process in THEKEY Ecosystem. In THEKEY Ecosystem, when an individual user living in Beijing needs to be identified, such as for the purchase of medical insurance in Singapore, the insurance company will trigger a request for IDV service and start a 8-step-journey as follows:

- The insurance company, as the service provider, triggers an IDV request including certain medical histories of the given individual user.
- The user accepts the IDV request by using his or her fingerprint through THEKEY APP or the equipment of the insurance company, and also signs off the relevant Smart Contract between the

insurance company, THEKEY and the user.

- THEKEY will review the IDV data request sent by the service provider against the KYC (Know Your Customer) policy of the relevant industry to justify if the data request is reasonable.
- THEKEY will make comparisons between fingerprint data sent and the relevant data validated by the government, and then cross check the latest PII data, behavior data as well as scene data of the given user. These are all automatically settled through encrypted interfaces.
- Once THEKEY is satisfied with the validity of user’ s ID, IDV will continue. Relevant PII like medical history data will be collected as defined by the Smart Contract. THEKEY will stamp its approval on Blockchain as verification of the result so that the medical insurance company can use it.
- The Smart Contract will be settled by TKY Tokens.
- At the same time, all previous calculations will be documented for future data audit.
- The credit of the user and the medical insurance company will be regularly evaluated and calculated through the above-mentioned data audit.

The IDV result generated from the above is efficient, accurate and reliable. It could also be tailor-made for any specific ID requirement from the Service Provider subject to relevant applicable KYC laws and regulations. This process will significantly reduce the cost of the insurance company and therefore further reduce the premium to be paid by the user.

Compared to other peers in IDV industry, who are also applying IDV into blockchain, BDMI has the following three advantages:

- More reliable results – The supporting data is gathered in real time,

is comprehensive, accurate and reliable. The data is also validated in advance by government agencies or other public institutions.

- Lower cost - Full use of existing data sources. Avoidance of duplicate work for data collection, processing and authentication,
- Better user experience – It is not necessary for individual users to install any application or upload any information.

We now invite you to hold THEKEY with us.

BACKGROUND

Identity Verification ("IDV") is a day-to-day demand for a growing number of institutions and individuals. Just think about when you open a bank account, take flights and go abroad, go to hospital and claim social medical insurance, do shopping by using credit cards, even open the door of your own home with a key, the request for proving that you are 'you' is raised everywhere and every moment in the real world.

With services and socializing shifted from the real world to the online world, IDV is becoming increasingly prominent. As the internet is a more anonymous space, people are able to hide their real identities on specific websites. One specialty for IDV on the internet is that there is no stable connection between the individual end user and the identity data stored or uploaded on the internet for verification. A good example is credit card fraud. The credit card user is not necessary the credit card holder himself or herself, simply inputting the required information on the credit card would enable the payment to proceed online. Although nowadays, banks may provide a double confirmation mechanism such as sending a random code to a registered mobile phone. However, what if the mobile phone has been stolen at the same time? More importantly, just like IDV in the real world, IDV on digital world is not only a matter of digital security for privacy protection, but also heavily involved in the

discussions around financial, political, moral, legal responsibility, and sometimes, even social stability and national security. The result of IDV service, therefore, must be undeniable and unalterable in many cases.

The abovementioned example illustrates the features for solid IDV solution on internet should include that

- The supporting data should be accurate and reliable. The identification data used for IDV service should be the data authenticated by the relevant government authorities, not the data uploaded by a user himself or herself. To use data uploaded by users will give room for fraud and deceit.
- The data needs to be crosschecked with other data of the same user, but from different sources to ensure solidity of IDV on the internet.
- The data acquired is comprehensive, and serve various IDV purposes.
- The data is updated in real time to capture any changes.
- The data is standardized and easy for digital processing;
- The data is well protected, with its safety guaranteed. This is not only for privacy protection but also for social stability. In some cases, it needs to address national security issues as the regulator expects.

Failure to meet these requirements might cause substantial loss, especially in the areas indicated below:

- Asset loss in peer-to-peer value transaction, like credit card fraud.
- Legal and reputational implication, such as inappropriate statement published online by an impostor who dishonestly uses someone else’ s name.

- Disclosure or theft of personal data.
- Disclosure of national confidential information. The data’ s safety is not only related to privacy protection, but also about national security. Some statics based on sensitive individual data, such as the data carrying medical and health information, are classified as national confidential information. To avoid any misuse or causing social instability, access to such information requires government authority approval in advance in many countries.

The existing IDV technologies, which have been developed and applied on the internet, can meet parts of the requirements. However, none can address all the issues listed above and the current IDV result could be denied and altered.

THEKEY PROJECT

WHAT is THEKEY Project

THEKEY Project, a world-leading solution provider in IDV industry, is here to leverage innovations in Blockchain and Smart Contract technologies to develop its second-generation IDV solution to address all the above-mentioned issues in the internet world.

THEKEY smart contract system will use NEO smart contract, and develop under DNA framework. THEKEY will co-establish a smart economy which consists of digital asset, digital identity and smart contract together with NEO. Focusing on identity verification, THEKEY will be the fundamental element of the whole system. The compatibility of NEO towards multi-programming language and the lightweight, high concurrency and expansibility of NEOVM will facilitate THEKEY smart contract development and popularization in various industries.

The second-generation IDV solution will be realized by BDMI technology. BDMI stands for "Blockchain based Dynamic Multi-Dimension Identification" technology, which aims to set up a powerful and cost-efficient identity verification tool for the internet. The ultimate objective of BDMI is to generate undeniable and unalterable IDV results.

BDMI embraces the six elements below ***simultaneously*** to deliver the perfect solution for IDV:

- Unique biometric data serves as the base of BDMI.
- The key data of BDMI used for IDV, including biometric data, are all validated in advance by the relevant government authorities.
- The data of BDMI used for IDV are comprehensive enough so that it can meet the different requirements of various clients.
- To ensure the reliability of BDMI, cross-checking is always carried out during IDV, between the government validated ID data and behavior data and scene data of the same user.
- To ensure solidity of BDMI, BDMI always uses updated data when an IDV is executed, to capture the latest changes, if any.
- Once an IDV is completed, the result will be properly documented for audit so that personal credit of the user can be evaluated and calculated.

HOW THEKEY Project Works

BDMI is a combination of two technologies, i.e. DMI and Blockchain.

DMI

Instead of setting up a centralized database for IDV solution THEKEY deploys its DMI System within the Information Centers of provincial or

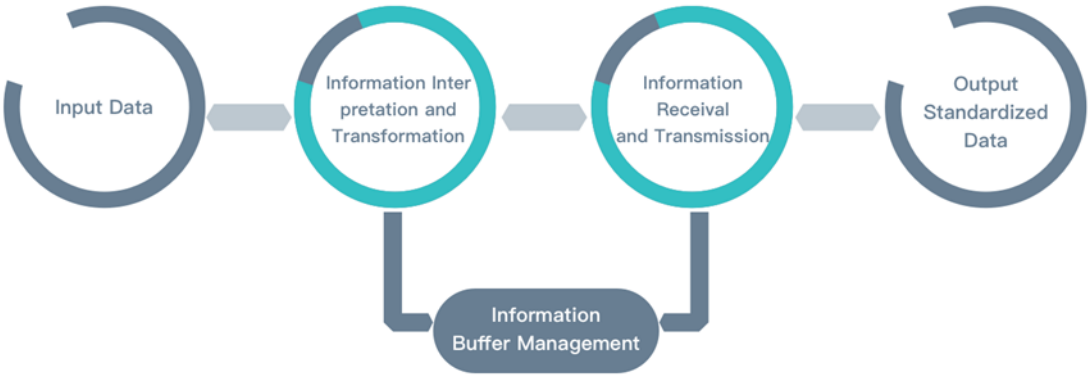
municipal governments. The biggest advantage of such deployment is avoidance of duplicate work for data collection, processing and authentication.

DMI system deployed in different cities focus on processing the centralized acquired data and mainly includes five modules as indicated hereunder:

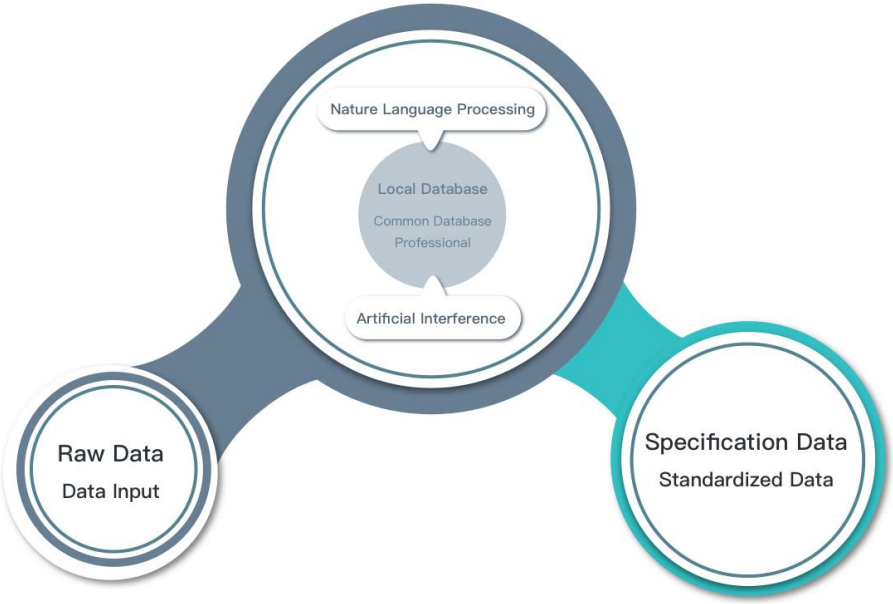
- Data Collection Module. It is based on ETL technology, which enables data extracted from different data resources, transformed to a uniformed format and upload to a central site. IDV based on the existed data can avoid the reduplicative cost on data collection, data processing, analysis and data verification.

- Data Standardization Module. Once the data is collected, it needs to be standardized before it can be properly used. In data standardization module, two sub-modules are important, as indicated below,

  1) Communication Protocol Standardization module. This module carries out an interactive transmission of the information among different data systems. When there is an information exchange between different systems, the module will fulfill the information visit and exchange by standardized communication protocol. The flow chart below illustrates how this module works.



2) Term Standardization module. Each industry has its own terminologies. Even the same term used in different area may refer to different thing. This module relies on three pillars: ontology, NLP (Nature Language Processing) and AI (Artificial Interference), to solve this problem and build up the foundation for data application in diversified scenarios to serve various purposes. The chart below shows how terminology is standardized under this module.



- Primary User Index Module. This module is to build up a search

dictionary, which can be used to easily find all the relevant files of every individual. All PII of a given individual will be collected as per his or her ID/ SSN and the module will organize the data as time-based inveted file. In an inveted file, the data will be structured as a tree, which contains a primary index, a secondary index and child indexes. The module categorizes the collected and processed data for IDV into different level of indexes as defined in advance. When an IDV process is triggered, the input data will be extracted and searched, if it matches the information in primary index. If the information matches, it will continue to cross-check the information in secondary index

- Data Warehouse Solution Module. This module is to ensure all the individual files are properly stored in the data warehouse so that once an IDV process is trigged, the relevant files can be easily found. The data warehouse solution will also embrace functions like data input, revise, statistics and retrieval.

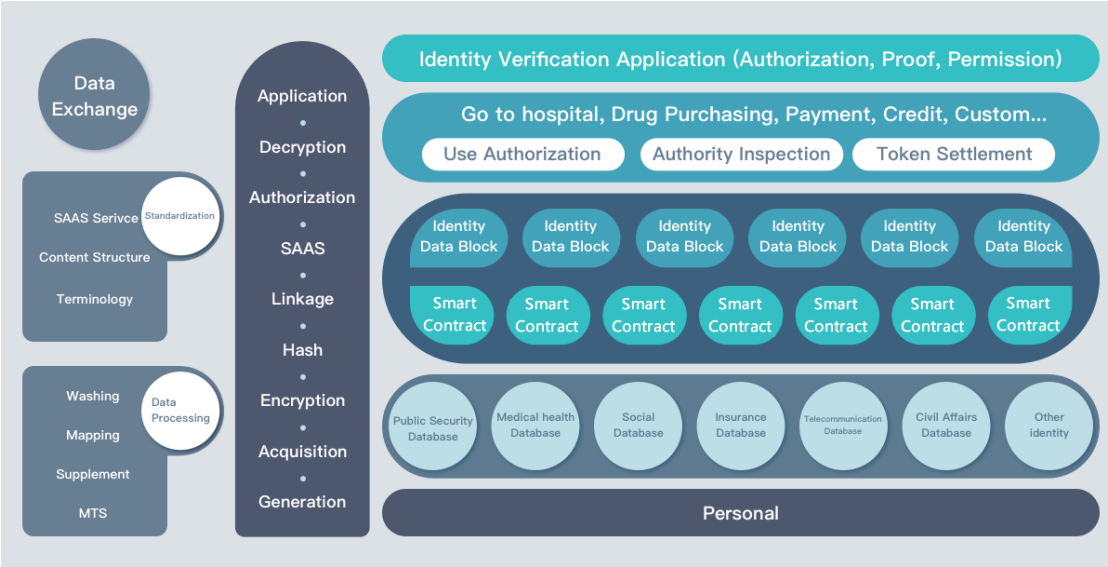
- IDV engine. The main function of the IDV engine is to complete the IDV service in forms of attestation based on the data exchange platform, which embraces the four modules as described above. When an IDV process is trigged, the biometric data sent by the user will be verified by the IDV engine against the biometric data of the same user but authenticated by data stored by government authorities. The initial verification will be further crosschecked with the latest behavior and scene data of the given user, received from other validators. Once the IDV engine is satisfied with the validity of the biometric data sent, the IDV process will continue. Relevant PII and other metadata will be collected by the IDV engine as requested, and the result of IDV service will be released in forms of attestation. At the same time, the results of all previous calculations from every step of IDV will be properly documented by the engine for regular audit. Personal credit will be evaluated

and calculated through the previously mentioned audit.

As demonstrated above with DMI technology, the centrally collected data could be well processed, transformed and easy to exchange among different systems. Afterwards, the data will be encrypted with a hash algorithm in Blockchain for decentralized application. Data ownership verification, authorization, pricing and payment will all happen on Blockchain.

+ Blockchain

Blockchain is a distributed ledger where the data is stored and recorded by different nodes, which maintain the data and transaction activities. Blockchain uses an asymmetric cryptographic algorithm, ensuring the data transmission and the safety in utilization, which is characterized by several features e.g. immutability, irreversibility, security etc. In particular, smart contracts are realized by programmable scripts, increasing the practicability of Blockchain. With those features, the application dilemma of identity verification technology is overcome. The following logical structure map clearly shows how the DMI technology applies on Blockchain to develop the new revolutionary IDV solution.



THEKEY Project team is working on combining DMI technology on Blockchain so that the following could be delivered:

- Individual user would have full control of their PII information and KYC standard in each industry should be followed as part of Smart Contract when initiating and processing IDV request;
- All records of PII relevant data collection and use will be stored on the Blockchain for auditing in the future, and to avoid any misuse;
- To address the requirement of an IDV result being unaltered and to avoid catastrophic breakdown, relevant data currently saved in centralized servers of various organizations will be indexed with identity data block correspondingly and stored in a distributed way.
- Due to the limit of storage size on Blockchain, an alternative option is to save PII data in the ETL database of the Validator in THEKEY Ecosystem, and save the hash value of the underlying data on Blockchain.

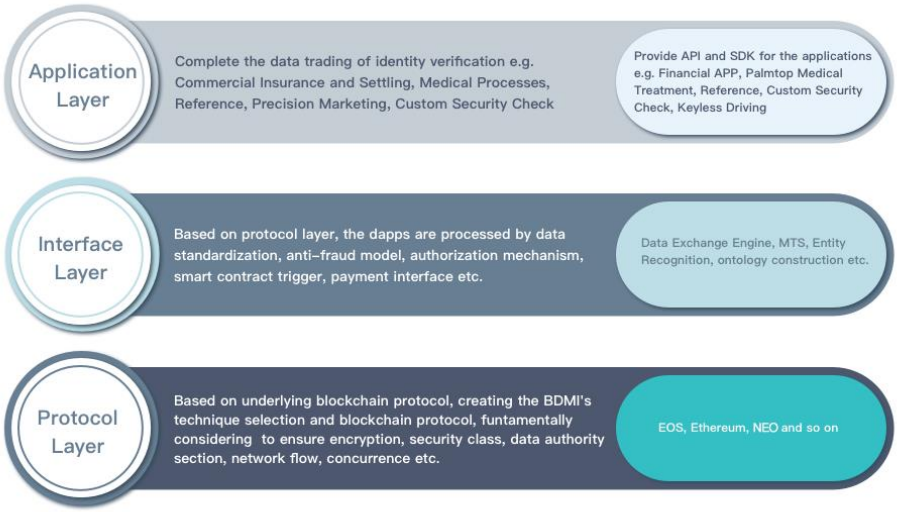
= BDMI

The BDMI framework can be divided into three different layers - protocol, interface and application as shown below.

The protocol layer is set up based on Blockchain, which is applicable for BDMI technical selection, such as ETH, EOS, NEO etc. This layer sets the safety level, data authority, concurrency and flow processing.

The interface layer provides identification data modeling by which the protocol layer can be connected with applications, to realize data standardization, anti-fraud modeling and smart contract trigger etc.

The application layer will realize the scenarios where identification can be used, where interface and SDK (Software Development Kit) shall be provided for the data exchange.



Existing IDV Solution

Before we continue with the second-generation IDV solution we are working on, let us look back at our existing IDV solution. Our existing IDV solution, developed by THEKEY Project team, is now being used in an APP known as "Social Medical Insurance 123", by which people can make mobile social medical insurance payment. The APP has a connection between the individual users and hospitals. The user can login the APP to instruct a payment for a prescription sent by a physician when going to the hospital. Unlike other smart payments in our daily life which are made out of personal bank accounts (for example shopping), social medical insurance payment is made out of a social medical insurance account. More requirements need to be fulfilled before a social medical insurance payment is made. Due to the nature of social medical insurance, it is critical to identify if the payment applicant is the same person as the beneficiary of the scheme. Our existing IDV solution facilitates this process by an 8-step-journey as indicated hereunder,

- Registration. The user needs to upload his or her biometrics data for registration on the APP. Such biometric data will be checked

against relevant data validated at the medical insurance administration agency. Meanwhile, it will be further crosschecked with the data that has been validated and stored by other organizations, such as telecommunication companies and banks. After the dual-check work, the registration could be completed.

- Once the user goes to hospital, s/he uses his or her finger print or face to make the payment instruction through the registered APP which triggers an IDV request.
- In response to the user's payment instruction the hospital will send the prescription as the claim, via the registered APP of the user, to medical insurance agency.
- THEKEY will first make comparison between the biometric data from the user and the biometric data authenticated and stored by medical insurance administration agency.
- Once THEKEY is satisfied with the consistency on the first checkpoint as described above, THEKEY will further crosscheck with the latest information collected from other institutions, like public security agencies, telecommunication and internet companies, among many others. This is to assess 1) if the user is still alive, and 2) if s/he still enjoys the entitlement of medical insurance.
- Once the user has been proven to be eligible for medical insurance , THEKEY will then collect all other relevant information for authenticity, eligibility, compliance and rationality checks against the claim submitted. Once the medical insurance administration is satisfied with those checks, the payment will be approved.
- The results of the above calculation will all be properly documented after the transaction is completed for regular audit.

- In the audit, credit of both user and hospital will be evaluated, calculated and documented, as per the anti-fraud, abuse and waste policies of the medical insurance administration agency. Criteria from other industry like financial industry, telecommunication, fintech companies are also used, on pilot basis, for personal credit evaluation.

Two remarkable features in our existing IDV solution compared to others are:

- The data used for validation is not acquired by the individual user. Instead, the consistency leading towards IDV results is between the data uploaded by individual user and the data which has been validated from government or public authorities. The biggest advantage of this structure is to avoid "contamination of data source right from the starting point of IDV" since acquiring identity-related data from a user and then using it as the reference will provide room for fraud and deceit.

- What the App provides is a channel bridging the information submitted by the user and the user's own identity record stored in government or public institutions. We do not need users to store their Personal Identifiable Information ("PII") on the App. Therefore, hackers are unable to access to users' information by invading any newly developed platforms.

We have so far already achieved the following with our existing IDV solution, which constitutes a solid foundation for BDMI,

- 23 copyrights have been obtained, 15 patents have been accepted by SIPO (State Intellectual Property office of the P.R.C) and start attestation process.

- The previously mentioned App is used in two pilot cities, with which people can make payment directly from their social medical

insurance account. The IDV solution is now being deployed in another 41 cities, covering more than 130 million people.

- Personal identity data, authenticated by relevant government authorities of 210 million people in 66 cities, are connected on real-time basis, which constitutes a solid foundation of IDV.
- Commercial contracts signed with the reputable firms worldwide, and the business model of our IDV products has been proven.
- Six relevant national laboratories have been set up together with government agencies, banks, insurance companies and one university.

The existing IDV solution of THEKEY project team has demonstrated the feasibility in technology realization and massive commercial value.

Although we have already made substantial progress in IDV industry, our existing IDV solution is only applicable in a centralized community at present. Hence, as mentioned above, we are planning to improve our IDV solution by introducing Blockchain technology. Blockchain offers a compelling solution to the problem of combining accessibility with privacy and security. Records can be held securely, using end-to-end encryption, and yet openly referenced and documented in a decentralized autonomy community. This solves the problem of dealing with highly sensitive or classified information in a way that still enforces all the privacy and confidentiality rights that consumers and regulators expect. Moreover, Blockchain technology will also help us to establish an ecosystem, through smart contract and digital currency, so that all participants are financially motivated. With Blockchain technology, we expect our planned IDV product can serve users better. People will no longer need ID card, passport, keys, credit card, even mobile phone for making payments, opening bank accounts, applying for loans, receiving pensions, and paying medical bills.

Comparing with other peers in IDV industry who are also applying IDV into Blockchain, our second-generation IDV solution has the following relative advantages:

- More reliable results – The supporting data is gathered in real time, is comprehensive, accurate and reliable. The data is also validated in advance by government agencies or other public institutions.
- Lower cost - Full use of existing data sources. Avoidance of duplicate work for data collection, processing and authentication,
- Better user experience – It is not necessary for individual users to install any application or upload any information.

THEKEY ECOSYSTEM AND TKY TOKEN

Along with the development of second-generation IDV solution, facilitated by token sales, THEKEY Project team intends to develop THEKEY Ecosystem for providing IDV service (the "Ecosystem"). The THEKEY Ecosystem will be a decentralized autonomy community, which will consist of three components of participants, (Validator, Service Provider and Individual User) Smart Contracts and TKY Tokens. The objectives of setting up THEKEY Ecosystem are, 1) to develop a healthy environment where PII can be properly used and protected, 2) to provide financial incentive to the participants in the Ecosystem.

THEKEY Ecosystem

Ecosystem Participants

There are three parties in THEKEY Ecosystem: (1) Validators who process the IDV request and generate the IDV result, (2) Service Providers who initiate IDV request and (3) Individual Users who are the customer of the

service provider and need to give consent to validators to process the IDV request. Among others, the Validators are the backbone in the Ecosystem. The Validators may include THEKEY, government entities, financial institutions and utility companies among many others. Since THEKEY is already an IDV service provider trusted by the parties concerned, it is easier to obtain data needed for IDV service from other sources, including highly sensitive data from government agencies as well as the data like medical records from hospitals. It is, therefore, an important node or an important validator in a decentralized IDV ecosystem. It is however not the only node or Validator in the Ecosystem. Once Validators receive an IDV request against a User from Service Providers, together with consent of the same user in forms of Smart Contracts, they will process the IDV request and generate result. After that, they are able to 'stamp' their approval on the Blockchain.

Smart Contract

Smart Contracts will play an important role in THEKEY Ecosystem. Before an IDV service is provided, various Smart Contracts need to be signed off by all parties concerned, including Validators, Individual Users and Service Providers who are seeking IDV service against the same user. Smart contracts will have "built-in" government rules, regulations as well as KYC (Know Your Customer) policies of different industries. The built-in policies of governments and industries will not only make a healthier Ecosystem but also save customer time for confirming what PII can be used every time when IDV service is needed.

Smart contracts are also enable the transactions among the Validators, Users and Service Providers. With Individual User's consent, Validators will provide with IDV service to the Service Provider who makes such request. Service Provider, subject to applicable KYC policies, can choose among the Validators for what hierarchy of PII and data source it requires to serve its specific IDV purpose. The price for

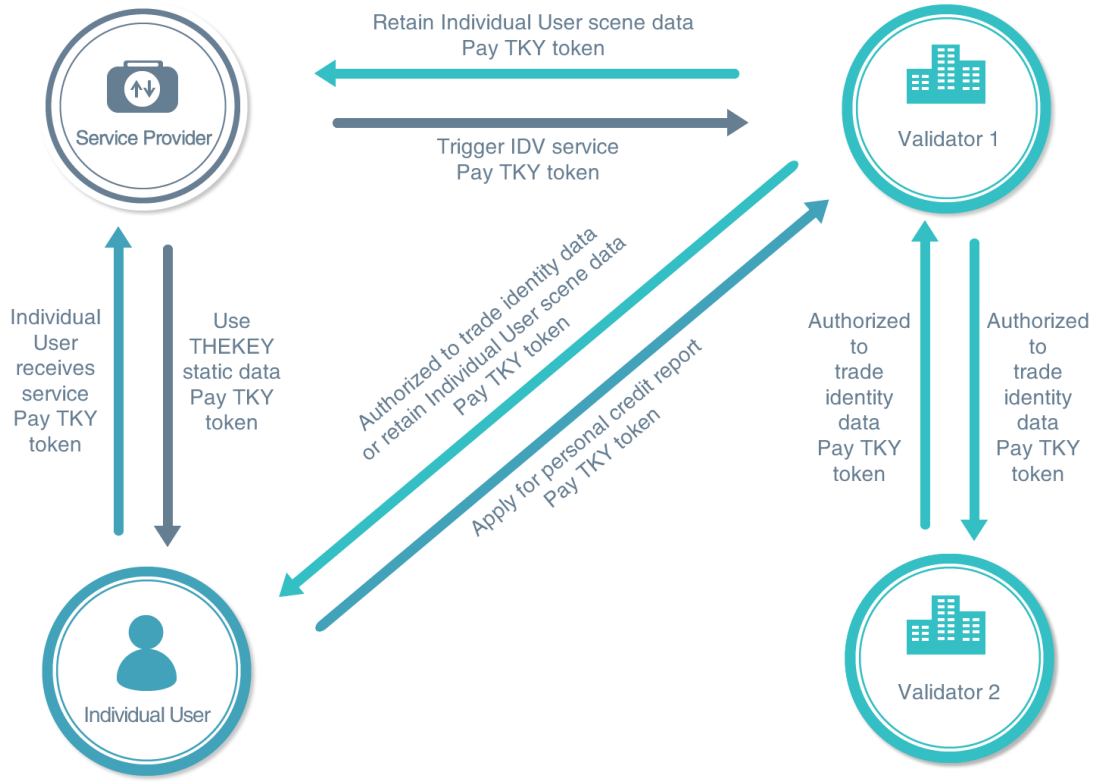
providing tailor-made IDV service will be adjusted by the Validators. Such transaction will conclude in smart contract among the Individual Users, Validators and Service Providers.

TKY Token

THEKEY token ("TKY Token"), another major component of the Ecosystem, is the only method to settle smart contracts signed between the participants in THEKEY Ecosystem. Once the Validator, Service Provider and the Individual User all sign-off on the transaction via the smart contract, the concerned parties will use TKY Tokens to settle the contract according to the agreed price and payment sharing plan. TKY Tokens would not only be obtained by purchasing in token sale events, but will also be able to be earned. Individual Users, Service Providers and Validators could perform valuable actions in THEKEY Ecosystem to earn TKY Tokens. For example, when government authorities, hospitals and other Service Providers or Validators provide with valuable data in the Ecosystem subject to Individual User consent, TKY Tokens could be gained and shared among the data providers and Individual Users. In addition, the credit obtained by current users who are using our first generation IDV product could convert their credits to TKY Tokens and spend in THEKEY Ecosystem.

TKY Tokens will be frequently used in THEKEY Ecosystem. After having TKY Tokens, the Individual Users can use them to purchase identity-related products and services that will be developed at later stage from THEKEY, such as service to run personal background check or access to individual credit reports, etc. Service Providers will pay TKY Tokens to Validators to purchase IDV service. Other Validators will also make their identity-related products and services available through the Ecosystem. Moreover, THEKEY will also use TKY Tokens for paying to other Validators or data providers when collecting data to enhance the

overall accuracy, comprehensively and completeness of PII for IDV processing.



Compared to other existing tokens or even fiat currencies, the unreplaceable function of the dedicated token, Key Tokens, in Key Ecosystem includes that

- It can be used for cross-border payment easily;
- It can be used for the smart contracts generated in Key Ecosystem;
- It is fractionally divisible.

A certain portion of TKY Tokens will become liquid during the token sale to help promote THEKEY Ecosystem. Like other cryptocurrencies, units of TKY Tokens are fungible and transferable. The ledger will provide a secure mechanism for owners to transfer TKY Tokens to other participants and TKY Tokens are expected to trade on cryptocurrency exchanges in near future. With the development and expansion of

THEKEY Ecosystem, as more and more participants in THEKEY Ecosystem are using TKY Tokens for IDV service, the core value of TKY Tokens could be realized.

How THEKEY Ecosystem works

The main features for IDV service process in THEKEY Ecosystem are below:

- Individual users are always in full control his or her PII. An individual user will use biometric data, such as fingerprints or face through THEKEY App or device installed at the service providers, to confirm his or her consent for validators to process the IDV request which is sent by the Service Provider. No process will be continued unless the individual user makes such confirmation.
- Specific requirements on PII data in the IDV request will be reviewed against the KYC standard policy of different industry before processing IDV requests. Aside from the confirmation from individual users, validators will also check the eligibility of the IDV request. For example, an IDV request sent out by a hotel containing the information on individual users certain medical history might be rejected, as it is not compliant with hotel KYC industry standards. However, the same request from a medical insurance company may be considered and accepted.
- Individual user does not need to upload his or her PII. Validators will collect requested data accordingly after ratification of the first two items above.
- Not one, but three sets of data of PII will be used during the process of IDV conducted by THEKEY via BDMIs technology. IDV service of THEKEY is a result of real-time cross-checking, between identity data, behavior data as well as scene data of a given user. Identity data are from government authorities, behavior data are

usually from financial institutions and utility companies among many others, whilst scene data are normally from service providers who are seeking for IDV service. For example, an IDV result as per a request from a hotel in Hong Kong at 9:00 am is positive, one hour later, the IDV result based on a request from another hotel based in the United States against by the same user might be negative, as there is some conflict in the Scene data for the given user. It is difficult to obtain all the data required from various data sources, and get them ready in advance at one point for a particular IDV service. It is equally difficult to provide such IDV service via a centralized service system. It is now possible, however, through Blockchain technology, to use those highly sensitive data for an IDV service widely and openly, while PII of users are well protected. Every data source/validator in a decentralized IDV environment is a node of the chain.

Consider an example case for IDV process in THEKEY Ecosystem. When an individual user who is living in Beijing needs to be identified, such as for the purchasing of medical insurance in Singapore, the insurance company will trigger a request for IDV service and start a 8-step-journey as follows,

- The insurance company, as the service provider triggers off an IDV request including certain medical-use history of the given individual user;
- The user accepts the IDV request by using his or her fingerprint through THEKEY APP or the equipment of the insurance company, and also signs off the relevant Smart Contract between the insurance company, THEKEY and the user.
- THEKEY will review the IDV data request sent by the service provider against the KYC policy of the relevant industry to justify if the requested data is reasonable.

- THEKEY will make comparisons between fingerprint data sent and the relevant data validated by the government, and then cross check the latest ID data, behavior data as well as Scene data of the given user. These are all automatically settled through encrypted interfaces.
- Once THEKEY is satisfied with the validity of user’ s ID, IDV will continue. Relevant PII and other metadata will be collected as defined by the Smart Contract. THEKEY will stamp its approval on Blockchain as the verification result so that the medical insurance company can use it.
- The Smart Contract will be settled by TKY Tokens.
- At the same time, all previous calculations will be documented for future data audit.
- The credit of the user and the medical insurance company will be regularly evaluated and calculated through the above-mentioned data audit.

Such IDV process above would significantly reduce the cost but enhance the accuracy and reliability for the medical insurance company, which will help reduce insurance premiums.

FUTURE WORLD WITH THEKEY

In light of the rise in e-commerce and increasingly digital lives, the need of IDV service has spilled quickly over every sector. THEKEY Ecosystem is a perfect platform using BDMI technology built on a distributed model with multi-parties attestation and fueled by TKY Token. It serves as the fundamental layers to other ecosystems, either on-chain or off-chain. The individual end users do not need to make any effort to prove who they are, such as credit card, keys or mobile phones for IDV purpose, but by simply connecting into THEKEY Ecosystem. Considering the huge

number of mainstream users and the rise of IDV service requirements, we do believe THEKEY Ecosystem is very promising and expandable. Here are some example uses below.

Convenient life

When you open the door, face recognition and fingerprint digitals on the door handle will scan the user to confirm the identity, and compare it with the latest behaviors maintained on Blockchain, by which it will justify the rationality of the time and place you are now granting access. Exit and entry through customs is complicated. However, with THEKEY Ecosystem, things get easier via face recognition and fingerprint verification, backstage information, blacklist from public security office, visa record, flight information and hotel information, will ensure effective clearance by the customs.

Automatic Diagnosis and Treatment of Diseases

The intelligent device on your body will detect the detailed data about your body when you feel feverish. Moreover, it can also tell where you are sick; MTS1 will diagnose your disease and recommend the most suitable medicine or diagnosis and treatment scheme according to your health record. It can even recommend the nearest and best doctor to you. The mixed payment from social security funds, self-paying and pooling funds will be completed in one action. Besides, the Blockchain IoT technology will help you get the cheapest medicine as fast as possible, which can be traced back to the source.

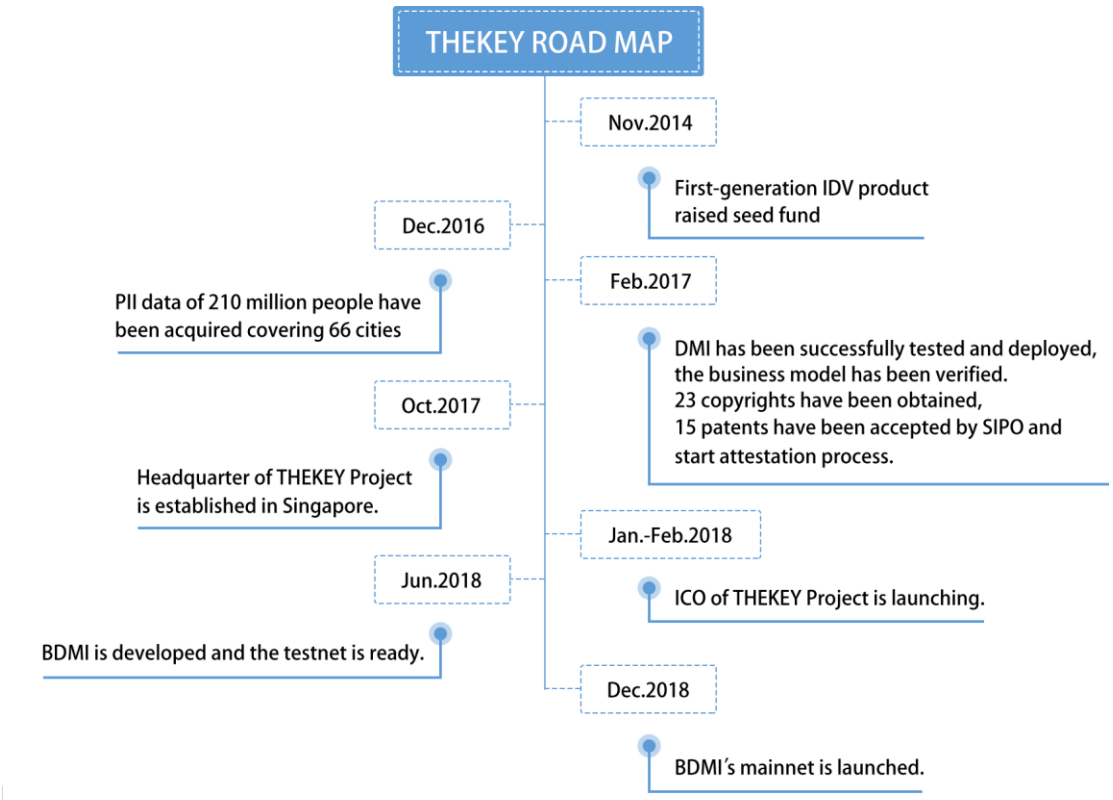
Accurate Recommendation

In the case that you want to purchase life or medical insurance, you can choose to join a mutual insurance organization, or choose a large

insurance company. You can give certain access permissions to the insurance organization, which it will base an appropriate insurance package for you. The insuring, underwriting and claim settlement are all based on your electric identity on THEKEY Ecosystem, and controlled by smart contracts. Moreover, you can sell your own personal data to insurance companies for actuarial purposes, which can decrease the insurance premium you need to pay. This is also realized via smart contracts in the THEKEY Ecosystem.

Every aspect of life is in need of IDV based on BDMI technology i.e. security check, access permission, medical treatment and shopping, etc. The existence of THEKEY Ecosystem will make the internet and the real identity integrated together to facilitate your life.

ROADMAP



THEKEY PROJECT TEAM AND PARTNER

Project Team

Catherine (Xueli) LI (CEO) Bch. Med., M. Sc.,(Computer Science, Mc. Gill Uni.)

Firstly introduced blockchain to DMI and has deep understanding of the industry application of blockchain. Five years' experience in Canadian International Research Council, where she was in charge of large cooperation projects of leading universities in Europe and America. Ten years of management and sales experience at IMS Health. Catherine is experienced in Big Data technology, medical informatics and multinational corporations as a cross-domain talent. M.Sc. majored in Computer Science at McGill University in Canada, granted with the Canadian national scholarship and Quebec provincial scholarship at the same time.

As the Chairwomen and CEO of the Project, Catherine is responsible for policymaking and implementation of the Project. Her major achievements are as follows,

- Founder of Dynamic Multi-dimension Identification technology. First in the world to provide IDV service on internet which has been well accepted by government, banks, statutory and private insurance, mobile medicine as well as the world leading smart payment companies.

- Team Leader; successful completion of the Data Acquisition Program of the Project covering identification related data of 210 million people in 66 cities from varies government departments, financial institutions as well as utility companies.
- Team Leader; six national laborites in the relevant scientific areas with government, insurance companies and universities.
- Team Leader; Champion and Bronze Prize Winner, China Social Security Data Application Championship, Ministry of Human Resources and Social Security of China, 2017,
- The Most Outstanding Women Entrepreneur in China, All-China Women's Federation, 2017.

Ken HUANG (President, Identity Verification & Blockchain, effective from 21st Dec 2017)

- Chief Blockchain Expert and Chief Identity Management System Architect in a well-known ICT company.
- ISC registered information system security expert.
- Ken worked for CGI Federal office in USA for 18 years and served as its Director of Cyber Security, Director of Cloud Security and he has established CGI Federal Identity Management Practice, and Cyber Security Competence Center. While working for CGI as Executive Consultant, he has consulted the United States federal Government, financial institutions, and utility companies and provided expertise in finance, blockchain and cyber security.

Guochun XU (CTO) B. Sc. (Computer Science)

17 years of working experience in the field of computer software and more than 8 years' experience in technical management. 10 years in China Unicom's information department as technician. Guochun specializes in data processing, natural language processing and other technologies. Expertise on blockchain and big data application. B.Sc. majored in computer science and technology at Heilongjiang Institute of Technology

Guochun is responsible for product planning, development and evaluation. His major achievements are summarized as follows:

- Team leader; successfully completed the design, development, maintenance and management of DMI technology.
- Team leader; successfully completed the deployment in 66 cities.
- In possession of 8 copyrights and Certification of ISO27001 and CMMIII, and applied for 7 patents (incl. blockchain).
- Passed ISO27001 and CMMI III.

Dasheng Zhou (Chief Blockchain Officer) B. Sc. (Computer Science)

13-year working experience and achievements in the fields of big data, blockchain, and artificial intelligence, served as the product director

Kangjian Shixun Technology, Good Will, etc. Work experience of banking finance, energy transportation, e-government, education and medical with solutions and services based on the blockchain technology. And he successfully led the team to make the achievement of the concept verification of personal privacy protection through blockchain.

Dasheng is responsible for blockchain technology development and application. His major achievements are summarized as follows:

- Team leader, responsible for the prototype framework design of Dynamic Multi-Dimension Identification ("DMI") products, and the modeling of multi domains identity verification scene of KYC.
- Team leader, designed the blockchain products meeting the needs of large scale users, which can tolerate the high concurrent transactions while protecting user privacy and data security.
- Team leader, accomplished the product design of drug traceability system and the application of medial health records; fulfilled the task of the preparatory work of blockchain laboratory.

Yuli HUANG(Chief Data Officer) B.Sc, M. Sc

Work experience in leading medical and informatics companies such as Good Doctor, CNKI, etc. Yuli possesses expertise in the field of data entity & relation identification, terminology standardization, structuralization of electronic medical record (EMR) and intelligent auxiliary diagnosis, etc. M.Sc. at Xiangya School of Medicine, Central South University

Yuli is responsible for data cleaning & processing, knowledge base, data modeling and analysis. Her major achievements are summarized as follows:

- In possession of 15 copyrights and applied for 8 patents;
- Team Leader, completed the data modeling of world's first DMI project.

Kun CHEN (CMO) B. Sc., M. Sc. Ph. D.

Marketing of medical data, service and software working experiences in Chinese Pharmaceutical Association, Searainbow, Business Engine, etc.) Rich experience in commercialization of raw data, market positioning and business development. Ph.D. at Institute of Marine Drugs and Foods, Ocean University of China

Dr. Chen is responsible for government and industry related affairs. His major achievements are summarized as follows:

- Team leader; signed data acquisition contracts with relevant government authorities, financial institutions and utility companies in 66 cities.
- Team leader; signed 20 plus world leading commercial firms for IDV services.

Lin ZUO (COO) B.Sc, M.Sc (Software Engineering and Management)

As an architecture design expert in the field of vertical search technology, Lin has extensive experience in the operation and management of

large-scale project of information systems integration. Experience in operation and promotion of national-level AI laboratory multi-mode search engine of Tsinghua University. In charge of the core technology system construction of Anbang Insurance's IT Department, and served as the project director in Unis Soft. M.Sc. majored in software engineering and management at Beihang University

Lin is responsible for product planning, development and evaluation. His major achievements are summarized as follows:

- Team leader; took charge of the nation-wide promotion of world's first IDV service.
- Team leader; took charge of the commercial negotiation and contract implementation of the IDV;
- Team leader; acquired 2.3 million personal users through the application of IDV.

In addition to the above, the team consists of another 28 members.

Advisors and Consultants

Roger Lim (Blockchain and Cryptocurrency Investor)

Roger is a notable Blockchain investor having participated in many projects in this space. Roger will share his experience and advise THEKEY in various aspects of the TGE.

- Co-founder and CEO of Webvisions, one of the largest managed

hosting services provider in Asia;

- Partner of Innosight Ventures, a Venture Capital firm based in Singapore.

Qingyue CHEN

Founder of Zhen IP, CFA, Venture investor, experts in blockchain financing system designer

Investors and strategic partners

Changlong HE

CEO of Qiwo Capital

Partners

With the commercialization of DMI, more and more world leading companies have already established partnership relations with us, some of which are shown here.

Administration Committee

THEKEY is organizing Administration Committee (hereafter referred to as "Administration Committee") which is a decentralized organization

specializing in the standardization and popularization of the identification system. It will manage the use of resources for this project for the best benefit of all participants and stakeholders, including operation management, market promotion, underlying technology and construction of service system, as well as planning and technology development. Administration Committee will decide how to use the incubation fund to assist and support the potential project teams and make the ecological business environment in THEKEY Ecosystem healthier and fruitful.

Administration Committee consists of investor representatives, founders and partner representatives, which are responsible for the decision-making, supervision etc. The constitution could be changed by voting for best of the project development and operation.

CONCLUSION

The THEKEY project has been prospected since 2015, aiming to provide a state-of-the-art and admirable user experience for IDV solution. The great success of our first-generation IDV solution based on DMI technology has proven the strong ability and commitment of THEKEY Project Team to deliver the second-generation IDV solution, as well as the massive commercial value in such a promising and expandable market. Currently, THEKEY Project team envisions that a new decentralized ecosystem for everyone’ s daily life will be generated by utilizing the combination of the existing developed technology and Blockchain technology.

Moreover, the shared IDV solution provided by THEKEY project is not merely the underlying basis for the prospective artificial intelligence (AI), but the essential element for all network legal relations (including copyright and data exchange) and crucial support for the popularization and development of Blockchain technology.