ai gang

Autonomous insurance network –

fully automated insurance for IoT devices and a platform for insurance innovation built around data

Release 1.4

Contacts:
team@aigang.network

Web:
https://aigang.network

Telegram:
https://t.me/aigangnetwork

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Release 1.4

Updates from Release 1.3 (2017 September):
• Updated changes from legal review and advise.
Updates from Release 0.3 (2017 August):
• New sections: Data Providers, Marketing Plan, Application of Funds, Prediction Markets, Token Sale details.
• Token model as native digital token for Aigang Protocol Prediction Markets.
• Insurance as DAO – Smart Pricing, Smart Claims, Distributions, participating in DAO Insurance, Free Reserve Calculation, Solvency II for Insurance DAO and Pricing Simulation using ML, **are separated from 0.3 release and will be used as standalone and separate** technical whitepaper for future Protocol and Platform vision.

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Content

Executive Summary

We are rushing into an era of pervasive connectedness. 55 billion Internet of Things (IoT) devices will be bought over the next eight years. Most of them will be able to diagnose their own operating state and communicate imminent failure. Because none of this requires human verification, there is an opportunity for automated insurance products – insurance that verifies claim events and pays claims automatically.

There is a second opportunity. Most IoT devices collect data. Drones, sensors and cameras can send data that can be used as an input to insurance calculations. This will see an explosion in the number and diversity of insurance products.

With smart contracts and a tokenised system that assesses risk, we're building a platform for autonomous insurance, usable by any manufacturer or insurer. Here is the pathway to that:

Harness the wisdom of the crowd

- Form prediction markets whose members (token holders) are subject specialists and insurance enthusiasts
- Combine prediction markets with insurance pools
- Use prediction markets to assess insurance risk
- Construct algorithms that price the policy premiums and predict profitability of insurance pools
- Develop a token model that incentivises and rewards members for accurate insurance market predictions
- Create a network effect so that all token holders benefit from the efficiencies of the system, regardless of their individual forecasting success

Automate through smart contracts

- Create a Decentralised Autonomous Organisation (DAO) that uses smart contracts to connect intelligent devices with insurance policies
- Connect to devices that communicate their need for maintenance or replacement
- Automate insurance payouts
- Use re-insurance to handle exceptions
- Automatically sell tokens or issue payments to keep reserves within target range

Partner with data providers

- Seek out manufacturers who already collect data on their devices' operating states
- Collect data from drones and sensors that would help inform insurance risks
- Use device data as intelligence in valuing and creating policies

Subject to the regulatory environment, encourage third parties to create insurance offerings using the platform

- Cooperate with manufacturers wanting to pre-install insurance policies

The global IoT insurance market is expected to be worth USD 42.7 Billion by 2022 and we are positioning ourselves as a significant innovator in that space.

We have demonstrated a proof of concept with working apps, integrated feeds from data suppliers, all required algorithms and business logic. We now require funds to build a fully operational platform, develop partnerships with data suppliers, extend our organisational infrastructure and promote the platform on an appropriate scale.

Why the blockchain

Aspects of blockchain architecture will re-make the insurance industry. A serverless, transparent, decentralised ledger means claim histories can be permanently and definitively recorded. We'll be able to prove date and time of policy issuance, or product purchase date, and confirm subsequent ownership and location changes. The ability to authoritatively timestamp claims will see easier reconciliations for reinsurance and improved audibility. In some cases it may mitigate insurance fraud. The blockchain can deliver a higher level of transparency and trust; a welcome outcome given that 73% of people do not trust their insurer.

Smart contracts, which bring together payments and programmability, mean that insurance contracts can be automatically executed. Smart contracts can trigger payments when a set of conditions are met. Combined with the ability to record events immutably, it will allow for automated claim handling. Earthquake, flood and drought information pushed to the blockchain could eliminate the need for individual assessments, allowing for more transparent payment criteria and reduced settlement times.

In short, we are within reach of the near-complete automation of the insurance process.

The burgeoning connectivity of IoT devices, with smart homes, car telematics and wearables at the forefront, will escalate this. Sensors, cameras and drones will supply verified, real-time data on our work and natural environment; the raw data that informs risk assessment, exposure and claim events. They can inform feedback control processes which could result in more accurate policy pricing. Not only will practically all consumer goods, vehicles, buildings, equipment and power grids know their own operating state, they will report their predicted and conclusive failure dates.

Using smart contracts we can now encode on the blockchain financial instruments, public records, physical assets keys (locks), intellectual property (including proof of ownership) and other empirical data like the weather and traffic data. This information can be programmatically captured, and sensors, software or people can be used as oracles – trusted third parties used by the software to make decisions about insurance policies and claims.

A DAO can be thought of as a smart contract which includes stakeholders and rules for managing its own funds. Once built, it makes business decisions and conducts transactions without the need for human involvement, making it a tremendously efficient business entity. In 2014, Long Finance proposed what Aigang is now constructing: a DAO which operates as an insurance platform.

The DAO structure also lets us use tokens as an incentive mechanism to reward the best informed insurance experts in forecasting the size and profitability of different insurance pools. This will become a competitive edge.

Prediction markets (PMs)

In his book 'The Wisdom of Crowds', James Surowiecki says "under the right circumstances, groups are remarkably intelligent and are often smarter than the smartest people in them". Google has experimented extensively in this area; using prediction markets to predict the success of various projects. Harvard Business Review has reported on the success of the Hollywood Stock Exchange (a prediction market), and the journal Nature recently published a comprehensive summary of scientific prediction markets.

Each prediction market is created to predict the outcome of a particular future event. People who take opposing positions on the probability of the event cause a market price, which represents a consensus.

The blockchain is ideal for this because it's decentralised, transparent and cannot be manipulated. Smart contracts automate all aspects of market operation and oracles can definitively report event outcomes.

A simple example: let's say you want to know if a particular disaster event will occur. Participants vote yes or no. The answers are turned into a probability. If 70 per cent say "yes", that becomes a contract you can buy or sell. If the nominal value of the contract is 10 units, you may buy the contract for 7 units. If the outcome is "yes", you are rewarded with 3 units; if you're wrong, you lose your 7 units.

This mechanism also works to predict a quantity, rather than a probability – the likely share price, property value or investment pool. This basic principle can be extended to very complex prediction models.

Using prediction markets, people can hedge their exposure to particular events. Let's say you live in a flood-prone area and can't buy flood insurance. You could buy "yes" tokens on the prediction of a flood in the next five years. In the event of a flood you would collect on your prediction and use the proceeds to cover your flood losses.

New insurance products will quickly emerge. Cryptocurrency mining hardware and exchanges are examples of volatile information markets. PMs will let participants insure themselves against adverse fluctuations.

With PMs insurers attract an informed group of speculators because those who believe they have better prediction skills or more knowledge than the market are incentivised by economic gain. With sufficient diversity, their collective wisdom can be more reliable than estimates by individual experts or teams with the same background.

Further, if your company invents a new technology but you don't know what the applications are, you could predict a small market size, incentivising scientists to explore applications for the material.

It is historically difficulty assessing risk in the information security risk management area. Companies could buy tokens predicting no security vulnerabilities exist in their software, creating an incentive on the other side of the market for hackers to identify weaknesses.

Prediction markets have the potential to become one of the most disruptive innovations in data science, which will have a strong effect on many industries, but there are significant regulatory challenges. Some governments are concerned that tokens used for predictions resemble gambling. We are confident that the efficiency of the system and its value as a market mechanism will be recognised over time.

Insurance pools

The Aigang platform can contribution to the insurance industry by adapting prediction markets to insurance pools. Members will appraise products launched on the Aigang insurance protocol. We are crowdsourcing actuarial work. This is a framework to improve the accuracy of risk assessment and policy viability.

Insurers will create tokens about the likelihood of events, then use the price that emerges to assess the viability of that insurance product.

Our PMs will deal with these aspects of the insurance pool:

- Capital PM
  Predicts how much capital (free reserves) will be raised to support the pool
- Premium PM
  Predicts the size of the premium the pool will amass
- Profitability PM
  Predicts the loss ratio or some other profitability measure of the pool

Insurers will use PMs to estimate pool sizes. What kinds of climate change insurance will have the lowest loss ratios? Are single event horse-riding policies more viable than annual policies?

Market operation

Effective prediction markets have three main properties.

- Diversity
  The participants have different information on which they base their prediction.
- Independence
  The participants make their predictions independently of other participants' opinions.
- Decentralisation
  The market is decentralised rather than expert-opinion led.

We believe these markets will work most efficiently if we create an incentive to attract participants. We'll do this by rewarding successful predictions once the outcome is known. Those rewards will be in the form of improved member rank and additional tokens, i.e. status and potential benefits.

Algorithms

The operation of the prediction market is governed by

- Member score
  Determines member rank and weight in overall market prediction. It's a measure of prediction success.
- Reward function
  Determines the reward granted for successful predictions
- Value function
  Determines the value of the whole prediction market

The algorithm below describes the high level framework for the PM, setting out dependencies between components of the model and the desired properties of functions. The precise nature of these functions and their parameterisation will be refined during Proof-of-Concept running on Ethereum Testnet smart contracts with a range of scenarios.

The score of each member i is calculated by accumulating rewards from all PMs:

$$S_i = \sum_{j=1}^{m} \Delta S_{ij}$$

Where m is the total number of PMs and ΔSij is the reward granted for member
i from PM j.

Member rank and weight are functions of the score:

$$R_i = f(S_i)$$
$$W_i = f(S_i)$$

Market prediction is the weighted average of individual predictions:

$$PM_j = \sum_{i=1}^{n} W_i P_{ij}$$

Where n is the total number of members, Wi is the weight of member i and Pij is the prediction submitted by member i for PM j.

The reward function determines the increase or decrease of the member score and depends on the following:

$$\Delta S_{ij} = f(|P_{ij} - Y_j|, |PM_j - Y_j|, R_i, V_j)$$

Where:
|Pij-Yj| is the distance of the individual prediction by member i from the actual outcome Yj
|PMj-Yj| is the distance of the market prediction PMj from the actual outcome Yj
Ri is the rank of member i
Vj is the value of PM j

If the reward also includes additional tokens the number of tokens granted can be calculated by modifying the same function.

Value function determines how valuable the PM is. The value of PM influences the rewards and can indicate the potential of the new product to which the PM is attached. Value is a function of two measures – measure of volume and measure of diversity:

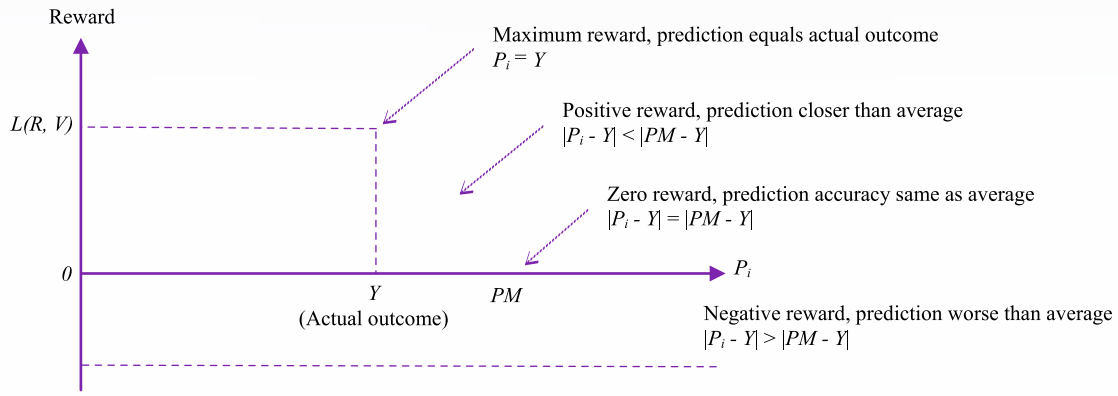
$$V_j = f(MV_j, MD_j)$$

Measure of volume captures how many participants took part so it is a function of aggregate weights of participants:

$$MV_j = f(\sum_{i=1}^{n} W_i I_{ij})$$

Where Wi is the weight of member i and Iij is the indicator of member i participation in PM j.

Example of the Reward Function



L(R, V) is the reward level which depends on the member rank and value of PM.

Smart policies

Just as the blockchain guards against double spending of currency, it can ensure insurance policies are unique and valid. We will have unalterable, timestamped evidence of an offer and acceptance. The rules that govern underwriting, execution of new policies, assessments, claims handling, the repair process and payment can all be embedded in smart contracts. Clearly, that will require standardisation of insurance cover and will be more realistic in some insurance product types than others.

From the viewpoint of token holders, the smart contract would automatically govern the terms and timing of new policies as well as the management and distribution of pay-outs. This would disrupt the insurance industry by allowing any party to participate based on a set of pre-determined rules.

Conventional insurance policies consist of two sections; standard wording and a schedule. The standard wording section describes the cover provided as well as rules, rights and obligations of parties. Those writing the smart contract must specify the terms and conditions under which an insurer is liable to pay. Perils and exclusions are likely to differ from conventional policies. For example, smart policies would not be appropriate where:

- The policyholder has more information about the likelihood of a claim than the insurer
- The claim event is under the control of the policyholder
- The claim event would be difficult to verify
- Loss can be considered as depreciation

The second section, the schedule of the policy would typically include:

- The details of insured object
- The excess or deductible
- The sum insured
- Optional coverage
- Premium and payment schedule

These are likely to vary by policy holder.

If wider cover is sought than handled by automated algorithms, part of the business could be reinsured. Rules for this can be coded into the smart contract, e.g. retain property damage claims and cede liability or retain smaller claims and cede claims above a retention limit. Smart policies as smart contracts would include a third section disclosing the software algorithms executing the operations of the insurance DAO.

Black Box insurance

An aircraft's flight systems and sensors are connected to a 'black box', used to identify causes in the case of catastrophic disasters. IoT technology means that many insurable items are now also able to supply detailed information about the device state and its history.

We see potential for new insurance products that monitor information from the APIs in sophisticated machinery and equipment like cars, yachts and aircraft.

We can monitor device performance over time based on sensors in the equipment. Black Box insurance could be bundled with the vehicle by default. If required, the blockchain could receive data from external data sources to retrieve extra information. Quite quickly we would be able to construct performance norms and variations.

An accident would trigger an event, or the event could be manually reported. The system would immediately gather sensor data, then register the claim. Algorithms would combine historical data, machine learning and data to evaluate the damage, calculate the payout and finalise the claim. Initially, we would need a support team to resolve edge cases and monitor fraud but we believe that the protocol can evolve to fully autonomous insurance driven by AI and the blockchain.

Dead Battery insurance

For a quick glimpse of the future, install our demonstration. In the simulation you'll buy an insurance policy for your mobile phone battery. Then you'll make a claim, pretending your phone has notified you that battery failure is imminent.

Download the Aigang app from the App Store or Google Play. Choose Get Insurance on the phone battery screen. Log in. Top up with Testnet ether. It may take a while to arrive. Go to the Offers menu and choose battery insurance. View the Offer Details then select Evaluate. Accept the contract and before you can say 'Aigang'; you're insured. Your phone makes the policy payment in Testnet ether. When you're ready to make a claim, go to Contracts and shake your phone. Presto: the ether payment is on the way and your claim is settled. If you're running a Web3 Ethereum client like Metamask you can also go to the Demo page at platform.aigang.network and review the dashboard. It now shows the total amount set aside to underwrite policies, the total claimed, and the amount held in reserve. Individual policies are shown in the table below.

The mobile phone is a good example of an insurable IoT device – it has inbuilt sensors which can detect battery condition and degradation. When the battery reaches a threshold, an insurance payout can be automatically triggered by a smart contract. The Aigang software can measure the current battery condition, associate an appropriate risk level and levy a suitable payment plan.

We plan to transfer the Testnet product to the Main Ethereum network and offer this product commercially.

Data Providers

Drones sales have tripled in the past year and will triple again, to seven million, by 2020.

We will partner with manufacturers whose devices already collect data that informs insurance and actuarial work.

These include makers of drones, sensors, WiFi-enabled and GPS-equipped devices and vehicles, and consumer goods. Collectively, these devices and their metadata are the new big data inputs to numerous risk-sensitive markets.

Drones will have a significant impact on the crop insurance market, allowing us to delineate marginal soils as well as predict and assess the extent of crop failure. Checks for building damage post-earthquakes will sensibly be done by drones in future.

Insurance assessors will use drones to evaluate storm damage instead of risking life and limb on damaged roofs. At other times they'll get a composite picture of snow build-up on roofs. Where fire is a risk drones will survey electricity poles and wires for maintenance levels, and evaluate firebreaks.

Local governments or their insurers will visually document pavements, roads and potholes; gas companies will automate pipeline inspections.

Pressure sensors in public utilities, temperature sensors in hazardous environments, soil moisture sensors on farms: all these record history and predict risk.

Some of the data collected will improve risk assessment, some will influence policy specifics and some will help process claims.

This is a key point of difference for Aigang. Our partnerships with data providers will be built around our technical insurance knowledge, IT systems integration and blockchain expertise.

Architecture

Our team is building a Protocol on the Ethereum blockchain which will see community, companies and developers build their own insurance modules on a decentralised platform.

The core layer on our stack is the blockchain, on top of which are the Aigang protocol and service layers. The protocol layer comprises smart contracts that contain the logic for insurance products, payment processing and the insurance products marketplace.

The service layer provides these services: data warehouse, risk assessment, reinsurance and risk pooling. It also handles the device data API and the SDK for insurance development. On top of that layer are the insurance products built by Aigang and by other parties.

Core components

Key back-end components

- Ethereum Blockchain
- Smart contracts and insurance logic
- Data warehouse
- All data from various devices
- Machine learning algorithm
- Analytical tools
- Tools for data analysis and statistical models creation, e.g. Tableu.
- Business logic API
- Includes all the logic for integrations with various IoT devices and manufacturer APIs, as well as the logic for data storage and validation
- Forwarder API
- Used as a middle layer between the blockchain and the front end. It performs data validation, security, stores user wallets and confirms transactions. We envisage this layer will removed in the medium to long term when we add smart oracles as part of the DAO.

Key front-end components

- iOS and Android apps, which connect to Ethereum through the Forwarder API

Contract structure

Smart contracts are written in Solidity. They contain the rules for premium calculation, damage evaluation (claim rules) and the logic for payouts. Smart contracts also enable the vesting of reserves within smart contracts, so that stakeholders can claim rewards according to pre-determined distribution rules. They will be used in predictions market as a mean of decentralizing predictions and rewards.

Contracts are alpha versions and are constantly being updated. There is considerably more work to do. Our plan is to use extant contracts as the base protocol layer and upgrade them as we progress. We have successfully baked in upgradability and can now easily integrate new products.

Proof of Concept

Using data from the battery insurance smart contracts, proof of concept has been demonstrated for the insurance protocol and the workability of the platform. IoT and smart device data has been used to develop a working insurance product in the Testnet Ethereum environment, and has been implemented for iOS and Android apps.

Github:
github.com/AigangNetwork/aigang-forwarder

Also in the Testnet environment we have demonstrated the operation of the DAO insurance platform, including contributions to insurance pools and claiming rewards from writing insurance.

The web UI is operational and we have integrated with the Ethereum wallet Metamask.

In terms of smart contracts, we have demonstrated the ability to issue policies, conduct risk assessment and process claims. Our smart contracts can perform insurance profitability calculations, create reserves and tokenise the insurance risk pool. The protocol architecture successfully integrates other insurance products.

Github:
github.com/AigangNetwork/aigang-contracts

Competition

AXA, AIG, others
Existing insurance companies

Large, established insurance companies are collaborating to learn about the blockchain, are dabbling in smart contracts and offer a competitive threat. However, they will be reluctant to undermine existing, profitable models and will move carefully and slowly, constrained by conservative management and large legal departments. We will move quickly, learn as we go, attract a group of early-adopter insurance specialists interested in prediction markets and work flexibly with IoT/data companies of all sizes.

Etherisc
etherisc.com
Blockchain decentralised insurance solution

The Etherisc team focuses on insurance solutions collecting external data (weather, flight delays, etc.) to validate claims and issue payouts. It targets 'semi-automated' claims, not Aigang's 'fully autonomous'. Aigang is specifically working with IoT devices and the information they generate, as well as sensors and third-party data.

Etherisc is concentrating on reinsurance risk and new types of insurance. Aigang is a platform the insurance industry can use to improve the profitability and adoption of existing products, though its prediction markets will also prompt product innovation.

Gnosis
gnosis.pm
Blockchain prediction market

The stated Gnosis vision is to have a variety of prediction market applications (including insurance calculation and claims processing) built atop the same platform and liquidity pool. There is no incentive mechanism built in to Gnosis to reward accurate predictions, and we believe Aigang will be more attractive to insurance industry specialists.

Gnosis do not plan to collect data from IoT devices for the purpose of modelling insurance profitability and viability.

Augur
augur.io
The first blockchain prediction market

Unlike Gnosis, Augur does not solicit third parties to build prediction market applications. Instead, it encourages participants to predict individual outcomes using the Augur network. It does not specifically target insurance industry applications.

iXledger (formerly InsureX)
ixledger.com
Peer-to-peer insurance trading

InsureX was to be the first blockchain-based marketplace for the trading of insurance products, but there are no smart contracts involved. Insurers, reinsurers and brokers can use iXledger to trade insurance products directly. It's a reinsurance play with the emphasis on health and life insurance. Although blockchain-based, this venture does not leverage prediction markets to add valuable information to insurance market interactions.

Dynamisapp
dynamisapp.com
Peer-to-peer insurance

An insurance DAO built on the Ethereum platform offering supplemental unemployment insurance. Uses the LinkedIn social network to assess reputation. This is a single product proof of concept, rather than a platform.

Rainvow
rainvow.org
Automated blockchain solution

Allows people to insure against various weather conditions. Focused on a narrow use case and acts as an insurance company itself.

Teambrella is a blockchain innovators who do not use smart contracts.

Non blockchain-based insurance innovators include Friendsurance, Lemonade and Trov.

Marketing plan

Our business is positioned as the autonomous insurance platform. We have three points of difference.

1. Our integration with IoT devices such that insurance products can be pre-bundled at point of sale then fully automated all the way through to the settlement of claims
2. The construction of a prediction markets platform specialising in insurance applications, and attracting specialists through financial and status incentives.
3. Strategic partnerships with data-collecting devices with the objective of using their information for improved insurance intelligence

Key aspects of the plan include:

Promotion

Conventional media

- Press releases and follow-ups from public relations professionals
- Paid promotion of our bounty program targeting insurance industry professionals

Personal attendance

- We will take Aigang roadshows around the globe, (initially Europe) aiming at the following constituencies
  - Insurance industry professionals who have the capacity to develop or test products on the platform
  - Insurance industry professionals (current and semi-retired) who may participate in prediction markets
  - IoT businesses and developers
  - Developers with the ability to create insurance products on the network
- We will actively participate at insurance conferences, IoT conferences and blockchain events, seeking speaking opportunities and taking up small, strategic sponsorship opportunities

Social media, through these channels:

- Twitter, targeting both blockchain and business industry journalists/influencers
- Interviews on reputable media websites and on business podcasts
- medium.com articles and posts on credible finance and business platforms
- Educative webinars and explainer videos on YouTube and Facebook

Partnerships

- Partnerships with data providers are integral to our business offering. They also broadcast the possibilities of the network on a broad scale. We will aggressively pursue drone application software developers and other insurance institutions. We will have a small number of memberships in influential associations (including the Enterprise Ethereum Alliance) and will actively participate in those bodies.

Processes

- We plan to use state of the art marketing automation to track acquisition, usage, retention and market development against measurable objectives.
- We will create brand standards for our communication practices and for marketing collateral used at conferences and roadshows.
- We will develop tactics around SEO, newsletters and lead generation and implement these as business processes.

Roadmap

Phase 1
MVP development v1.0

Ethereum blockchain smart contracts are written to control policy issuance, risk assessment and claim processing. A user interface exists for the insuree to manage all insured devices. Smart device-tracking software use cases are developed for issuing claims automatically.

Blockchain environment: Ethereum Testnet
Status: This work is completed and Proof-of-Concept apps can be downloaded from aigang.network/#section-downloadapp.

Phase 2
MVP development v2.0

Ethereum blockchain smart contracts are updated to deliver prediction market functionality. The user interface allows stakeholders to operate the prediction market, access data, manage their portfolio of insurances underwritten. Back-end infrastructure is created for off-chain data collection and calculation.

Early stage discussions with IoT device manufacturers and data suppliers

Blockchain environment: Ethereum Testnet
Status: This is work in progress and early alpha can be accessed at platform.aigang.network.

Phase 3
Beta version

Public release includes the prediction market platform and several developed insurance products. We have an open beta version of the platform for stakeholders, underwriters, specialists, insurance enthusiasts and other people to participate in. Reinsurance is integrated, expanding the number of fully autonomous insurance products. A community of smart insurance enthusiasts is starting to assemble.

Strategic agreements are signed with IoT device manufacturers and data suppliers. Widespread publicity is generated around early stage products and the Aigang platform's use of prediction markets.

Blockchain environment: Ethereum Mainnet
Status: Completion target is Q1, 2018

Phase 4
Release v1.0

Stable and functioning prediction markets software. The development platform and API are being used by module developers to develop new and improved insurance products. Evidence is emerging of the performance benefits that diverse, well-structured performance markets provide.

Data from IoT devices is integrated and used in insurance policy applications created by Aigang. The first pre-installed insurance contracts go live in partners' IoT devices.

Blockchain environment: Ethereum Mainnet
Status: Completion target is Q3, 2018

Phase 5
Release v2.0

Incorporates machine learning, a real-time pricing algorithm, the analytical platform and tokenised insurance risk pools
Blockchain environment: Ethereum Mainnet
Status: Completion target is Q4, 2018

Phase 6
Release v3.0

Includes a complete insurance OTC trading platform. The product development SDK is complete and in widespread use.
Blockchain environment: Ethereum Mainnet
Status: Completion target is Q1, 2019

Phase 7
Release v4.0

We've created a fully autonomous insurance DAO – a platform for innovation and efficiency. Customers are accessing new and improved insurance products. Some of these have been created by third-party developers, others by Aigang. Customers are using our permission markets to hedge exposure and engineer business results. Experts and insurance specialists are earning rewards through PMs. Actuarial results improve. Insurers are using Aigang to broaden the scope of coverage, increasing the size of the insurance market. Financiers and backers are funding new policies, the industry is more dynamic and the platform is flourishing.

Blockchain environment: Ethereum Mainnet
Status: Completion target is Q2, 2019

Challenges

We believe that Ethereum is the most appropriate platform for this project, and are pleased with progress made to date. We are well aware that much work is to be done and that significant challenges exist across the Ethereum community in managing transaction costs and the scalability of the platform. We will be applying ourselves to this work.

Other challenges include raising awareness of the AIX on a limited marketing budget as well as finding appropriate IoT and data-sharing partners and negotiating satisfactory financial arrangements.

Application of funds

Blockchain insurance protocol development – 60%

A large part of the budget will be applied in four areas:

- The creation of ongoing development of our insurance blockchain protocol
- The end-user experience for iOS and Android applications as well as the Aigang platform itself
- API integrations
- New features

Security – 15%

Implementing security for the Aigang network

Principally this will involve the auditing of smart contracts governing the protocol and its interactions with off-chain data sources (drones, smart devices, phones, etc).

Operations and marketing – 15%

Additional staff and resources to cover day-to-day operations and prudent management as the organization expands. This will include further development of business processes and the preemptive recruitment of experienced operational management.

Legal and consulting - 10%

We are acutely aware of the need for rigorous compliance. We will need our own well-resourced legal department and access to specialist legal advice. Our principal concern of course is to fit within complex regulatory frameworks across the globe. In this regard, we have instructed Asia Practice LLC, a boutique corporate law firm in Singapore, to advise on the Aigang token sale.

Percentages are estimates only and budgeting will be re-cast once fund-raising is complete.

Token sale details

10% of total target funding was raised at pre-sale in August.

On 15th November 2017 at 1PM UTC Aigang will offer to the public 51% of AIX tokens. A further 29% will be allocated to creating a strong development and data-sharing community actively contributing to the platform. Tokens will be ERC20 compatible and limited in supply. No additional new tokens will be created after the token sale.

The AIX token

We are aware of the successful and increasing use of crowdsourced intelligence in stock markets and forex markets. We are applying that methodology to insurance. AIX is a utility token which entitles holders to participate in our insurance prediction markets. Accurate predictions are rewarded with reputational benefits as well as additional tokens. The incentives are designed to ensure strong, on-going demand for these limited-supply tokens.

Members will receive Aigang AIX token rewards in return for telling us whether they are bullish or bearish on particular insurance markets or products. **We use a 'proof-of-stake'/'proof-of-reputation' algorithm** based on **token ownership and an immutable reputation score stored on the blockchain.** It takes into account the current weight in the prediction market, mechanics of insurance pools, the user's proportion of total AIX tokens, and their reputation score.

As well as predictions, the AIX token will allow members to submit proposals for product improvements, making PMs a tool for product development. A vibrant community of smart insurance enthusiasts is critical, and we will attract those people by rewarding accurate predictions.

The AIX tokens are non-refundable functional utility tokens, do not in any way represent any shareholding, participation, right, title, or interest in Aigang or any other company, enterprise or undertaking, nor will AIX tokens entitle token holders to any promise of fees, revenue, profits or investment returns, and are not intended to constitute securities in Singapore or any relevant jurisdiction.

AIX token will be consumed through interactions between participants on the platform.

Token Issue summary

Mission	Aigang is an autonomous insurance network – fully automated insurance for IoT devices and a platform for insurance innovation built around data.
Token name	AIX (pronounced "ikes")
Ticker	AIX
Token issuer	Aigang Ltd.
Token type	Ethereum ERC20
Price	1 ETH = 2000 AIX
Target contributions	A maximum of 45.000 ETH worth of AIX tokens
Purchase cap	Sale is individually capped for the first 24 hours
Early contribution bonus	First hour bonus: 15% more AIX tokens Second hour bonus: 10% more AIX tokens
Timeline	Registration for individual cap opens 15th October, 2017 – https://aigang.network/#timer Sale commences 15th November, 2017 9PM Singapore Time (UTC+8) 3PM Munich Time 10AM New York Time 2PM London Time 1PM UTC Ends December 15, 2017
Handover of tokens	With smart contract exchange
Trading	Trading on exchanges commences January 2018
Transferability	Commences on the first day of trading on the exchanges
Legal advisers	Asia Practice LLC

Token distribution

We aim to engender confidence and trust within the AIX token holder community. 80% of all AIX tokens will be distributed. This includes the Aigang token sale, community initiatives and incentives for the supporting ecosystem.

		Use of proceeds
51%	Distributed to public during Token sale	Contributions will be used to develop the protocol and the platform, and to fund security, legal and operational needs.
29%	Ecosystem and community initiatives	Comprises education initiatives, incentives to developers and data providers to create new insurance modules, and incentives to prediction market participants - Up to 4% will be used for the bounty, referral incentives and other community-building initiatives. - Up to 15% will be applied to prediction market initiatives and incentivising that community. - Up to 10% will be used to provide liquidity for the AIX token, through the use of currency reserves and token changers*. AIX token holders will be able to liquidate or purchase AIX tokens without the need to find a counter-party to buy or sell to.
20%	Aigang team and advisors	These are placed to acknowledge the time, effort and resources contributed to the Aigang protocol and platform. We include a portion reserved for future team recruitment. The Aigang team and advisors receive their tokens as part of their compensation package, and team tokens will be vested for a twelve month period.

*Aigang will commit to the Bancor protocol and use Bancor's token changer smart contract to ensure liquidity for AIX tokens and trustless smart contract token exchange.

Team

We are a team with most members based in Vilnius (Lithuania) and Singapore. The following people are currently working either full or part-time basis. Post token sale we are budgeting for up to ten full-time employees and three to four part-time employees.

Team profiles

Augustas Staras - CEO

Augustas is a Bachelor of Business Management and Administration with over ten years' experience in creating, growing and managing online businesses. He co-founded gosavy.com, a European peer-to-peer lending and investment platform with over 15,000 users. He worked on the decentralised VPN blockchain project Mysterium Network, helping them raise USD$14M in their ICO.

linkedin.com/in/augustasstaras

Aidas Ignatavicius - Chief Actuary

Aidas has a Master's Degree in Financial and Actuarial Mathematics from Vilnius University. For ten years he's worked as an actuary for Lietuvos Draudimas, a leading European insurance company. His responsibilities include designing, validating and testing various pricing models for insurance products and policies.

linkedin.com/in/aidas-ignatavicius-74318714a

Reda Markeviciute - Insurance Product & Policy Manager

Reda has a degree in Financial and Actuarial Mathematics and a Masters in Banking. She has over ten years' experience in capital raising and business development in both financial and digital businesses. She's worked as a product manager and actuary at SEB Life Insurance, a leading Scandinavian insurance company, and created her own successful startup, plateculture.com.

linkedin.com/in/redamarkeviciute

Darius Devenas - Lead Software Engineer

Darius worked as a Senior Software Engineer in Adform - a reporting platform for media agencies, trading desks and advertisers. He is a full stack developer with over eight years experience in enterprise software solutions and is responsible for the Aigang architecture and smart contracts.

github.com/dariusdev
linkedin.com/in/darius-devenas/

Marius Adasiunas - Full Stack Developer

Marius is a bright, hard-working and ambitious developer with proven communication and team work skills developed while working within a software engineering development as an individual and team member. Highly energetic and takes initiative, able to multi-task effectively, and eager for new challenges.

github.com/adasiunas
linkedin.com/in/mariusadasiunas

Mindaugas Jucius - Developer

Mindaugas is a BSc in Computer Software Engineering. He has considerable experience working on large scale projects, having worked on the Vinted application, which has over 15 million users. He has a particular interest in and enthusiasm for iOS architecture.

github.com/MindaugasJucius
linkedin.com/in/mindaugas-jucius-915929bb

Naglis Zemaitis - Developer

Naglis is a BSc in Computing Software Engineering. As well as being a developer he's the co-founder of ItWorks Mobile, a small app development company. Naglis has built secure and intuitive Android applications for banks and large music festivals and worked for a short time at the banking and fintech podcaster, Rebank.

github.com/galisamas
linkedin.com/in/naglis-žemaitis-22826993

Advisors

Bok Khoo - Blockchain Advisor

Bok consults to banks and corporate treasuries, investment managers, government entities, exchanges and financial software vendors across four continents. His expertise includes fixed interest and derivatives in risk management and trading systems, and blockchain technologies. He is working to bring decentralised trustless exchanges and traditional fiat financial instruments to the Ethereum platform.

He is a Bachelor of Economics from Macquarie University, Australia, an Associate of the Institute of Actuaries of Australia (AIAA), and an Actuary and quantitative software developer with over 28 years' industry experience.

github.com/bokkypoobah
On Ethereum.StackExchange.com and
reddit.com/r/ethereum as BokkyPooBah

Niv Calderon - IoT advisor

Niv has a Bachelor of Arts in Sociology and Anthropology from Tel Aviv University. He's the co-founder of Wearable Valley, one of the largest communities in Israel working on IoT and wearable technology. Since 2008 he has consulted to industry on wearable technology trends, business implications and user experience. Niv lives in San Francisco and is responsible for investor relations and digital marketing at Envoy There, a closed car-sharing electric vehicles network.

linkedin.com/in/nivcalderon

Clarence Guo - Legal advisor

Clarence is a practising advocate and solicitor in Singapore with 7 years' experience and an Associate Director of Asia Practice LLC, a boutique corporate and finance centric law practice with expertise in corporate, regulatory and compliance matters. He has previously practised in one of the largest law firms in Singapore, and has assisted a variety of fintech start-ups on regulatory and compliance issues, as well as general corporate matters. He is well-versed with the rapidly developing regulatory environment for blockchain technology, and understands the disruptive potential of this new technology.

linkedin.com/in/clarence-guo-650b8330/

Company background

We have chosen to conduct the AIX token sale in Singapore in order to demonstrate our commitment to stability, transparency and the rule of law. Singapore has a good reputation as an international marketplace with excellent business infrastructure, and most importantly we believe that the Singapore government is supportive of start-ups in the cryptocurrency space.

Conclusion

We at Aigang believe that the future of insurance will be defined by blockchain and crypto technologies, helping create new digital insurance services geared for mobile and digital world. The emergence of IoT industry and growth of smart devices will unlock a potential for insurance services, and unlocking crowd-sourced intelligence which can help understand the data and apply new algorithms for risk and pricing, and thus can offer convenient and easy to manage insurance products. This can be achieved only by using decentralized blockchain platform, as basis for creating insurance protocol, which can embed in any device in the world.

With our Token Sale, we want a wide range of people to participate in this long-term journey and create success story by changing how insurance should work in our new digital age.

Be part of this journey, and join our Token Sale - we are looking forward to welcome you onboard!

Contacts:
team@aigang.network

Web:
https://aigang.network

Telegram:
https://t.me/aigangnetwork