Ownernet

The future of ownership of digital things

Abstract

Ownernet aims to become the premier mass-market depository for digital things. Ownernet is a new protocol, marketplace and ecosystem that offers insured custody of an extensive range of digital things to the public and to SMEs. The key concepts of the Ownernet are:

❖ A distributed virtual global ledger of ownership of natively digital assets and digital records of ownership of tangible and non-tangible items. The Ownernet ledger enables direct straight-through registration of natively digital records and creation of new digitised records of ownership of items not previously digitally recorded.

❖ Ultra-secure and unique architecture, with a partitioned custody vault structure for account segregation, utilising virtuated, Cloud-based, clustered HSMs for protection of encryption keys.

❖ A Tier 2 open protocol for mass-market insured custody of a broad (and future-proofed) range of 'digital things'.

❖ An intuitive front-end (untypical of DeFi) with world-leading AI-based identity authentication.

❖ A crypto-economic reward model based on Owncoin (OWN), a utility token that will power the network.

❖ An investment opportunity in the OWNG governance security token that will drive governance decision-making.

❖ 'Insured Custody' as an innovative new indivisible unit of digital economy activity. A set of 'Insured Custody Node's (ICNs) as a network of commercially independent, network-regulated business operations that are algorithmically and cryptographically driven, earning crypto-economic rewards in the form of Owncoin in return for providing insured custody to the public and to SMEs. These nodes will deploy computing power to perform economic value-add activity in the form of competing to provide best-value insured custody to the public and SMEs (unlike Bitcoin mining whose energy is directed at maintaining blockchain consensus).

❖ A new category of commerce, namely Miner-to-Miner (M2M), in which Insured Custody Nodes can mitigate digital business risk by re-insuring part of their insured custody positions with another ICN on the network.

❖ 'Ownernet Transaction Layer' (OTL): a transaction routing mechanism for scalable off-chain instant transfer of digital things to and from insured custody. OTL does not employ energy-intensive block consensus computing, but instead operates a transaction-level validation model that guarantees transaction validity, prevents double spend and provides transaction finality.

❖ The Ownernet will be a self-balancing network, where (a) buyers and sellers of insured custody achieve equilibrium of supply/demand; (b) the crypto reward level will find equilibrium through market competition between Insured Custody Nodes; (c) The market price for insured custody will balance dynamically in response to (c1) the dynamic value of Owncoin against major fiat currencies and (c2) the dynamic rate of return available to providers of insured custody through yield farming or other monetisation channels, which can be authorised by the owner of the digital assets to be sweated by the Insured Custody Node provider to generate returns that pay in part, in full or in excess towards the premium charged for insured custody.

❖ The Ownernet marketplace will operate under a hybrid distributed governance framework, where the community of users and node operators will be empowered to help steer the direction of development of the marketplace and incentivised to integrate with other DeFi protocols and enhance the critical infrastructure.

Among the business inspirations for the design of Ownernet are: (a) the mass-market need for insured custody of the huge volume of digital things that we will generate in the digital economy; (b) the societal dissatisfaction at Web 2.0 big-tech companies owning and monetising for its own benefit the personal data of its users (c) the framework of the Lloyds of London insurance market structure with its network of insurance brokers who compete yet collaborate; (d) the amazon.com marketplace, which offers a platform where entrepreneurs can create and run businesses. Therefore, the Ownernet is to be architected as an open protocol, one where it's community of users have entrepreneurial opportunities to add dApps & computing power to scale the network, to offer digital products and services around ownership of digital things to that same community, and where the community of users is empowered to make dynamic decisions on what, how and for how much to monetise their digital things for their personal profit.

Just as the open protocol nature of GPS has prevented the possibility of the growth of a giant multinational 'Placebook' from collecting and owning every facet of information about our personal movements, similarly the open protocol of Ownernet can prevent the possibility of a giant multinational collecting and owning every facet of information on what we own in the emerging digital economy and how we use it in the era of Web 3.0.

The Ownernet has potential to become a globally popular and critical service in the emerging era of 'the Internet of value' and a major block of infrastructure for the Web 3.0 digital economy.

There is also an opportunity of first mover advantage to become the defacto global mass-market trusted depository.

Social Context

Web 1.0 was founded on open protocols, developed in the 1970s and 1980s, which were defined and maintained by academic researchers and international-standards bodies, which reached mass audience usage in the 1990s. We all still use and benefit from those open protocols. Email still uses the open protocols of POP, SMTP and IMAP. Websites rely on the open protocol HTTP. Messages are still circulated by using the original open protocol of the internet, TCP/IP. And they are all free. No corporation owns them. No corporation owns global email. No corporation owns your ability to create a website or to have it integrate with another website or web-service. These open protocols were not kept as an asset to build into a mega tech company but were gifted to humanity by the founders of the internet.

Another of the gifted open protocols is GPS. Originally developed by the United States military, the Global Positioning System was first made available for civilian use during the Reagan administration. For about a decade, it was used by the aviation industry, until individual consumers began to use it in car navigation systems. And now we have smartphones that can pick up a signal from GPS satellites orbiting above us, and we use that extraordinary power to do everything from locating nearby restaurants to playing Pokémon Go to coordinating disaster-relief efforts.

But what if the military had kept GPS out of the public domain? Presumably, sometime in the 1990s, a market signal would have gone out to the innovators of Silicon Valley and other tech hubs, suggesting that consumers were interested in establishing their exact geographic coordinates so that those locations could be projected onto digital maps. There would have been a few years of furious competition among rival companies, who would launch their own proprietary satellites into orbit and advance their own unique protocols, but eventually the market would have settled on one dominant model, given all the efficiencies that result from a single, common way of verifying location. Call that imaginary firm PlaceBook. Initially, the embrace of PlaceBook would have been a leap forward for consumers and companies trying to build location awareness into their hardware and software. But over time, the power of Placebook would have been questioned for knowing where you are, where you have been, for how long and who else is with you, and denounced for monetising for its own benefit its lifelong record of your every journey and every business and social encounter. But none of that happened. PlaceBook doesn't exist. Why? Because GPS is an open protocol and so cannot be owned by a big-tech company to exploit your personal location history data to benefit itself and its shareholders.

However, for all their brilliance and humanity, the inventors of the open protocols that shaped the internet failed to include some key elements that would later prove critical to the future of online culture. Perhaps most important, they did not create a secure open standard that established human identity on the network. Units of information could be defined — pages, links, messages — but *people* did not have their own protocol: no way to define and share your real name, your location, your interests or (perhaps most crucial) your relationships to other people online. In the yawning gap, Facebook grew as the global platform where people most commonly share details of themselves.

The world now advances towards the 'Internet of Value' where ownership of digital things will move across the internet, person to person, without intermediary institutions. We see the digitalisation of every facet of commerce. As this new digital ownership economy emerges, the immediate challenges are how to register the ownership of digital things, how & where to safekeep digital things and how to transfer immutably their ownership, person to person. These digital things include digital currencies, digital debt & equities, digital records of ownership of physical items, digitised IP rights and digital records of ownership of new sources of proprietary data such as personal or corporate data created in the metaverse or by the 'Internet of Things' (IoT). For this coming digital age, mass-market custody needs to be an open protocol. The capability to securely register, own and use the data on the digital things you own should be yours alone. It should be available for free as an open protocol, just like GPS data is available free to everyone. It should not be left to some mega Web 2.0-type tech company to start to get a foothold.

Regarding the Internet of Things, the volume of personal data that will be generated daily in the future will be mind-boggling. Proprietary behavioural data will be generated from every digital thing and every internet-connected device we own, such as emissions data from our cars and refrigerators. But where will the data go? Where will it be stored? Who will own it? Does the public want some new or existing large global tech company such as Facebook or Google to hold this data for us and on us and monetise it for the value of their shareholders? I believe not. In contrast, we need a publicly controlled utility, manifest as an open protocol, which is available for the public to hold its digital things securely. The data should be released only on a need-to-know basis, and each data release should be controllable by the owner of the data. If this vast trove of information is to be used for a commercial purpose, the economic benefit should accrue directly to the person who owns the device that generated the data and not to a centralised big-tech company and its shareholders.

Web 3.0 enables us to use blockchain technology to create an open protocol for the ownership of digital things. The network can be owned and run as a public utility, where no tech-giant company gets to own, know and exploit for their own commercial advantage the records of everything you own or have owned. That information will belong solely to the person who registers it and only they can release it to be monetised. Under this Web 3.0 public utility protocol model, instead of creating value by owning something, as in the shareholder equity model, people create value by improving the underlying protocol or by helping to maintain the global virtual ledger or by writing apps or simply by using the service.

Scope of the Ownernet

Definition of 'Insured Custody'

'Insured custody' is defined as a new, innovative indivisible unit of digital economy activity'

➢ 'To offer insured custody': is when an Insured Custody Node offers to provide cryptographically- and cyber- secure safekeeping of one digital thing for a period of one day or one month and to accept liability in that period to make reparations to the customer in the event of loss of, damage to or compromise of the digital thing during the period.

➢ 'To purchase insured custody': is when an individual or an SME pays an Insured Custody Node for cryptographically and cyber- secure safekeeping of one digital thing for a period of one day or one month and transfer away the liability for that period to make reparations for any loss of, damage to or compromise of the digital thing during the period.

Ownernet offers a service guarantee of DeFi safe custody. It does not seek to present itself as a DeFi insurance company. Loss or damage of digital things while under custody makes for a claim under a service guarantee, not an insurance claim.

In this context, 'make reparations' could mean to make whole and/or to provide compensation. Insured Custody will be paid for using the Owncoin (OWN) token. Insured Custody Nodes (ICNs) will stake OWN tokens as Network Regulatory Capital (NRC) to indicate the level of their capacity to provide insured custody to end users.

For which 'Digital Things' will Ownernet provide mass-market Insured Custody?

Ownernet will provide insured custody for digital currencies in the form of coins and stablecoins and for digital tokens. A digital token is a representation of value. To detail further, we must first answer '*What's the difference between a crypto currency, a coin and a token?'*

➢ 'Cryptocurrency' is a term used to refer to any cryptographically-secured 'Coin' or 'Stablecoin' or exchange-traded 'Utility Token'.

➢ A 'Coin' is a cryptocurrency that is the official 'native' currency of a particular blockchain, e.g. BTC on the Bitcoin blockchain, ETH on the Etherium blockchain or DOT on the Polkadot blockchain.

➢ A 'Token' runs on somebody else's blockchain e.g. Uniswap's UNI token runs on Ethereum. There are two categories of tokens, 'Utility Tokens' and financially regulated 'Security Tokens'. There is great future growth potential for non-regulated 'asset-backed tokens', which can fall into either category.

➢ A 'Stablecoin' is form of cryptocurrency that is backed by reserves that guarantee its value but does not have its own unique underlying blockchain. Therefore, technically speaking, a stablecoin is in fact an asset-backed token rather than a coin.

In the context of ICOs (Initial Coin Offerings), the term 'Coin' was often applied to the marketing and sale of what were in fact utility tokens. While the central purpose of a utility token is typically to operate a particular protocol or distributed application, many utility tokens are also traded on Digital Exchanges for investment and liquidity purposes. If a utility token is traded, its value is not linked to the value of the company that designed, built and operates the associated protocol or dApp, but rather to user demand for the token which in turn is driven by the popularity and success of the operating protocol or dApp.

Secondly, what are the distinct types of 'Utility Token' that Ownernet will support?

➢ 'Identity Token': proves rights of access to a blockchain network service or rights over a network's governance.

➢ 'Payment Utility Token': acts as unit of account and/or a store of value and/or a method of exchange on a blockchain. Typical use cases are:

      (a) to pay rewards to users of a distributed application, such as to gamers who play-to-earn

      (b) to pay rewards to an operator of a network infrastructure service e.g. to a miner

      (c) to purchase a Distributed Application (dApp) -based service

      (d) for intra-chain or cross-chain payments

➢ 'Governance Token': for managing voting rights and governing a blockchain protocol or dApp. The governance tokens of some protocols or dApps offer a superset of rights beyond governance rights such as the features of a utility payment token or identity token.

➢ 'Stablecoin': tracks a traditional fiat currency such as Dollar or Euro.

➢ 'NFT': A natively-digital or digitised work of creative art, music or literature, with potential to attach digital lifecycle records of ownership and utilisation.

Thirdly, what are financially-regulated 'Security Tokens' for which the Ownernet could provide mass-market custody? (Note that 'Security' in this context does not refer to safety, but to a regulated financial instrument.)

➢ Equity Token: represents the value of shares in a company that are issued on a blockchain.

➢ Debt Token: usually corporate bonds issued on a blockchain.

➢ Digital Investment Fund: either (a) units in the fund are distributed and administered on a blockchain or (b) a traditionally distributed and administered fund invests in digital assets.

➢ Digital Derivatives: Financial derivative products created on a blockchain whose underlying assets may be traditional financial instruments of digital blockchain-based security tokens.

➢ Real-Estate Tokens. For example, Registers of Scotland (RoS) is responsible for keeping public registers of land, property and other legal documents in Scotland. It has recently migrated ownership records to the Cloud. It is a potential next step for Scotland and other countries to create blockchain based records and allow digital ledger technology to play a role in the legal process of transfer of ownership of residential property.

In general, utility tokens are used to raise funds for project development and as a store of value to create an economy on a particular blockchain network. They can also grant users access to services and voting/governance rights within a specific project's ecosystem. On the other hand, a security token is primarily used to represent the ownership of assets, which are verified on a particular blockchain.

What other categories of digital ownership records do we expect to emerge in the future as unregulated 'Asset-backed Utility Tokens' for which a demand will exist for secure insured custody?

➢ Digital Identity. This refers to the real identity of a person or corporation and not just an access token on a dApp.

➢ Metaverse-related records of ownership of digital assets such as metaverse virtual property.

➢ Token with embedded proprietary data:
   ❖ Corporate Proprietary Data (e.g. Corporate CO2 emissions data),
   ❖ Personal Proprietary Data (e.g. behavioural data generated by IoT devices).

➢ Token for digitised ownership record of Intellectual property (e.g. registration of ownership of IP of a song)

➢ Token for digitised version of an ownership certificate of a tangible asset, such as a boat. These tokens could also be a digitised copy of a receipt as proof of ownership of a physical asset such as a bicycle or of a household device that is connected to the Internet of Things (IOT).

➢ Token for digitised ownership record of a tangible asset that has no tangible proof of ownership (e.g. an heirloom).

➢ State-registered tangible asset token (e.g. vehicles).

Finally, will Ownernet provide insured custody of Central Bank Digital Currencies (CBDCs)?

CBDCs are a form of digital cash. Similar to cash, and inherent in its name, a CBDC is issued and controlled by a central bank, such as the European Central Bank (a digital Euro) or Bank of England (a digital Sterling Pound). Unlike a crypto currency, a CBDC is backed by the full authority of the central bank that issues it and its value is fixed at a 1:1 level with banknotes issued by the same central bank. A CBDC differs from a crypto currency in another critical way, namely that the central bank can issue however much CBDC it wishes, by expanding its balance sheet in an analogous manner to how new waves of money have been created by central banks in recent years to fund governments through the Covid-19 pandemic.

In order to be permitted to hold CBDCs in custody, it can be expected that some form of banking or deposit-taking licence would and should be required in every country where that activity occurs. At this point in time, it is not anticipated that Ownernet will seek to acquire banking licences, and so will not offer insured custody of CBDCs

Network Regulatory Capital ('NRC')

To function as an Insured Custody Node, node operators must commit 100% of regulatory capital to the Ownernet network, in the form of Owncoin (OWN), for every unit of insured custody that they wish to sell on the network. In other words, providers of insured custody must stake their own digital assets into a committed pool (The Treasury) to the full level of insured custody they wish to offer on the Ownernet marketplace. In DeFi parlance, the ICN must lock OWN value to the network sufficient for the replacement cost of the digital thing. At a later point, the Ownernet Treasury algorithm will be enhanced to take account of levels of volatility in the dynamic value of various digital currencies so that lower volatility assets & currencies may be allowed a lower level of network regulatory capital coverage for offering insured custody.

When Ownernet reaches a sufficient level of market traction and irreversibility, the introduction of the concept of Risk Weighted Assets (RWA) will be considered by the Ownernet Governance Board, with input from the OWNG token holders. This banking concept allows lending exposure based not on the full value of a loan, but on risk-adjusted basis, which results in far lower levels of reserves needing to be held to expand a bank's lending portfolio, while retaining sufficiently prudent buffers against market shocks. This concept could have applicability to the Ownernet rules on minimum Network Regulatory Capital to meet market demand for insured custody while retaining sufficient capital buffers.

For a period at and after launch of the Ownernet service, the 100% level of NRC required will be discounted for digital entrepreneurs who launch ICN operations. This will allow the marketplace to find an equilibrium in pricing required for successful operation of an ICN. These discounts will be funded through the successful market launch of the OWN token.

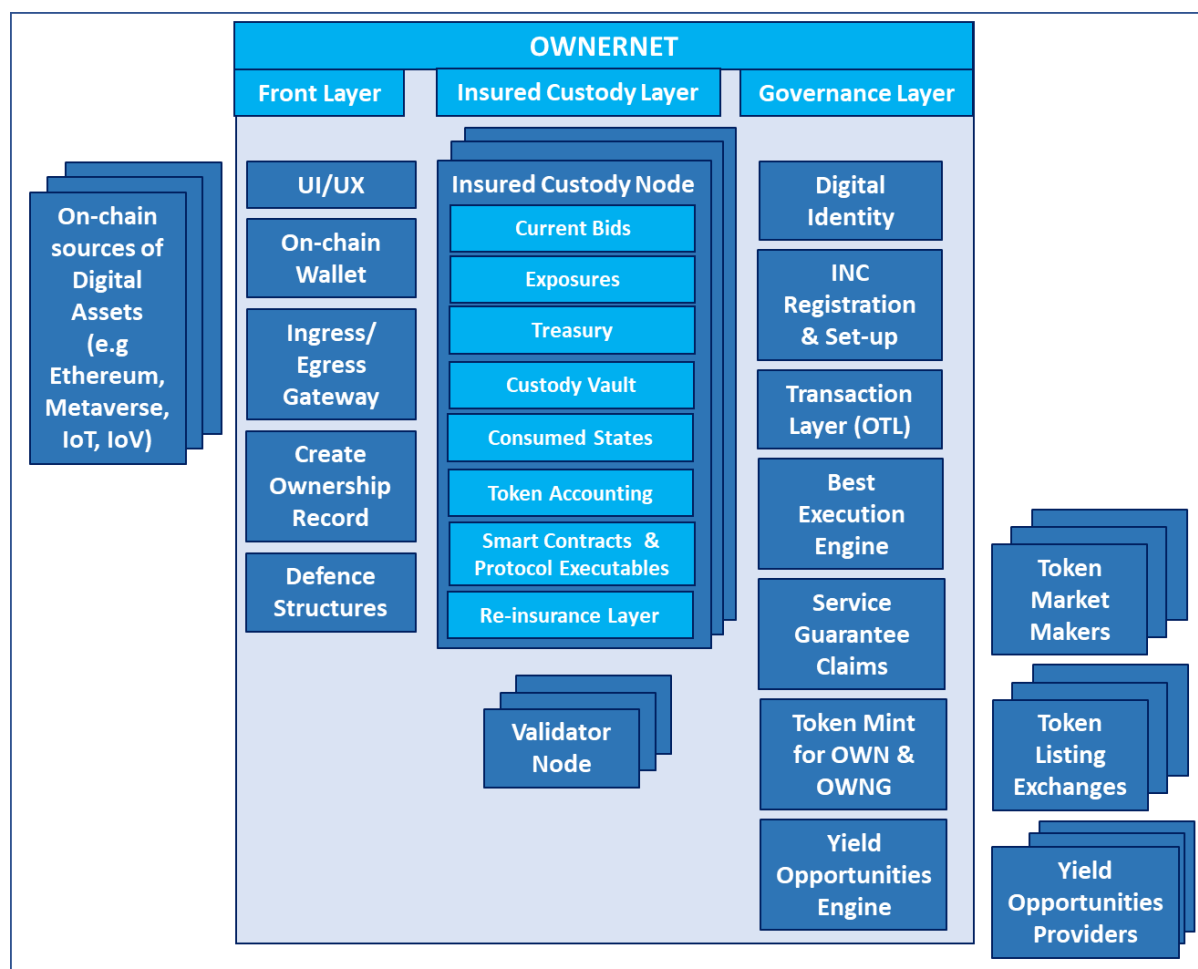**Technology Architecture Components**

Figure 1: Ownernet Technology Architecture Components

The Ownernet protocol technology architecture components are described on the following pages.

The underlying chain technology for Ownernet will be chosen from existing prominent Tier 1 blockchains, based on an assessment of factors such as functional alignment, scalability, resilience, support, growth path, potential for network effects and potential for investment in Ownernet that their organisations can offer.

1.   Insured Custody Nodes

Each Insured Custody Node (ICN) runs under a Java Virtual Machine (JVM). Data is further cryptographical secured by the ICN and held in JDBC-compliant databases. Each ICN Node holds a ledger of its own transactions. ICNs hold transactions only in which they participate. The Ownernet DLT differs from other public blockchains in that there is no broadcast of transactions to the network and no energy-intensive block consensus method. Instead, Ownernet utilises a high-speed peer-to-peer messaging protocol (the Ownernet Transaction Layer), and performs validation at transaction level, at counterparty level and at network level.

An Insured Custody Node can participate in the insured custody process by "staking" a given quantity or value of OWN tokens. Each Insured Custody Node runs the following software components:

➢ 'Current Bids': holds the portfolio of details of current in-force offers to provide transactions committed non-expired insured custody. Referenced to provide a dynamic calculation of NRC under-offer, which defines the potential additional NRC exposure created if all current offers into the marketplace to provide insured custody are accepted.

➢ 'Exposures': holds the portfolio of details of in-force insured custody transactions for the ICN. Referenced in the dynamic calculation of NRC Allocated.

➢ 'Treasury': holds details of total Network Regulatory Capital (NRC) that has been committed ('locked') to the Node ('NRC Committed'), including a breakdown containing details of each capital lodged transaction. Treasury also holds totals and details at transaction level of the 'NRC Allocated' and the 'NRC Available'. NRC Committed, NRC Allocated and NRC Available are profiled over time buckets of days, months and years. Functionality to enable ICN operators to lodge additional NRC, withdraw NRC or drawdown its crypto-economic earnings.

➢ 'Custody Vault': operates dedicated, segregated wallets, partitioned with virtuated cloud-based clustered HSMs

➢ 'Consumed States Ledger': Details of all historical versions of transactions engaged in by this ICN, now with a state of 'consumed'. Referenced by the double-spend prevention contract.

➢ 'Token Accounting': Keeps a ledger of crypto-economics incentives earned through the provision of insured custody services to individual and SME end users.

➢ 'Smart Contracts & Protocol Executables': A set of constantly running software modules that sustain 24/7/365 operation of the Insured Custody Node and maintains the duration and expiry of exposures.

➢ 'Reinsurance Layer': A novel 'Miner-to-Miner (M2M) class of commerce in which a set of smart contracts and programmatic intervention by the ICN operator enables an ICN to set parameters for communicating with other Insured Custody Nodes in order to lay-off risk, as a mechanism to neutralise exposures without having to reduce or terminate service that has been committed to a customer. In this situation, the underlying asset will not be moved from one ICN to another, but a macro risk-transfer transaction will be agreed between ICNs.

Validator Nodes:
The Ownernet marketplace comprises the Insured Custody Nodes (ICNs) and the validator nodes. Each ICN holds a ledger of the transactions with which it is involved. It does not hold details of transactions in which it is not involved. Collectively the set of transactions in all the ICNs' ledgers represents a single virtual data base. Each transaction receives its guarantee of validity and of finality from a Validator Note, through a process flow that incorporates cryptographic validation.

2.   Front Layer

UI/UX: A decentralised application (dApp) the enables users to interact with the Ownernet. User functions will include:

➢ User registration and KYC ('Register')
➢ View the fee levels, including the monthly subscription rates. Payment accepted in fiat or OWN tokens.
➢ Create and/or lodge a digital asset into their Ownernet wallet; Set permissions to stake/yield-farm the asset on behalf of the user; Withdraw a digital asset.
➢ View a summary of assets, fees and earned yields.
➢ Make claims for loss under the guarantee of service. Submission of a claim requires a small quantity of OWN.

On-chain Wallet:
The Ownernet Wallet will support a wide range of cryptocurrency coins and tokens, NFTs, security tokens and asset-backed utility tokens, such as NFTs. The wallet will be functionally intuitive to enable users start minting, lodging and earning in minutes. The user can use Wallet Settings to define which categories of digital things he/she wishes to allow be used for monetisation. For example, a user may elect that an ICN should leverage for value his/her cryptocurrencies, but not his/her personal data such as emissions data generated by his/her IoT-connected car.

Ingress/Egress Gateway: This is a set of on-chain interoperabilities to enable ingress of digital assets from any source for the purpose of insured custody on Ownernet. Example sources could be digital exchanges, NFT marketplaces, Defi, SocialFi, GameFi, Metaverse of IoT devices. The initial set of interoperabilities will be built by the Ownernet Foundation. A reserve of Owncoin (OWN) will be reserved to reward developers who contribute interoperability to additional sources and to who add support for additional token standards such as ERC-721, ERC-1155 and EIP-2981.

Create Ownership Record
This module will sit behind the UI/UX and enable a user to create an ERC-20 token to register ownership of physical or intellectual property and commit the ownership record to insured custody. This mechanism connects off-chain to on-chain.

Defence Structures
Although depicted in Figure 1 as a single module, the cryptographic and cyber defence activities and technologies are spread across the entire architecture of Ownernet. The defences include layered firewalls, layered encryption, secure messaging protocols, partitioned HSMs with layered and selected integration of multi-party computation techniques, segregated custody accounts, multi-layered authentications, no exposure of private keys, autonomous Network Operations & Security Operations and dynamic BCP & DR and recovery. The Ownernet network achieves robustness by segregating and layering the cyber-attack surface threat while automatically dispersing the custody of digital assets across the decentralised network. The protocol's cloud based HSMs also provide security, as content is encrypted end-to-end at the Ownernet Ingress/Egress Gateway, while providers of insured custody do not have access to private decryption keys.

3. Governance Layer

The Ownernet Governance Layer comprises all components that drive the protocol itself and the ecosystem the enables and supports the Ownernet marketplace. The governance layer will include:
- Digital Identity
- Insured Custody Node Registration & Set-up
- Ownernet Transaction Layer (OTL)
- Best Execution Engine (BEE)
- Validator Nodes
- Token Mint for OWN and OWNG
- Yield Opportunities Engine ((YEO)
- Claim Assessment

Digital Identity:
The registration service will operate the X.509 certificate standard and enable performance of KYC, AML and CTF obligations. As Ownernet is to be account-based, not UTXO-based, this gives the advantage that a user can change their public/private key pair without having to change their receiving address through which they Ingress and Egress. Ownernet will adopt multiple channels for verification of identity:

(a) Integrate with state-approved services for corporate identify and personal identity verification such as Luxembourg's 'LuxTrust', so that users can leverage any such prior state-approved identify registration.

(b) Integrate an industry-leading platform with powerful, metric-driven ethical, AI-based identity authentication that enables zero trust network access that goes way beyond usernames, passwords and document-based KYC/AML.

(c) Create an Ownernet identity verification service by licencing and integrating a KYC service such as the functionality used by banking provider Revolut.

Insured Custody Node Registration & Set-up:
Each Insured Custody Node (ICN) will operate under a legal framework. To register as an ICN, the operator must complete a corporate user registration, accept a set of terms and conditions that are available for review online, and state the types of digital assets for which they wish to offer insured custody and the level of Network Regulatory Capital (NRC) they are prepared to stake overall and for each digital asset class. These settings are changeable after registration and subjected to a process of verification of staked NRC. When the ICN registration is complete and approved, the applicant will receive a key to enable activation of the ICN node software, which is downloadable from GitHub. The operator must then commit the NRC in order to start operating as a provider on the Ownernet.

Ownernet Transaction Layer (OTL):
The OTL high-speed messaging and transaction routing protocol will utilise features from the scripting language of the chosen Tier 1 chain and take account of AMQP (advanced message queuing protocol), to enable scalable off-chain instant transfer of digital things to and from insured custody and for executing each message type across the platform.

Best Execution Engine (BEE):
The Best Execution Engine (BEE) will run 24/7/365, busy with the task to select for the user the best value offer for insured custody that is available in that moment from any of the Insured Custody Nodes operating on the network. The BEE will operate the principles of transparency, efficiency & fairness that are enshrined in MiFiD (Markets in Financial Instruments Directive) & MiFID II, which are EU Directives under which stock exchanges and Multi-Trading Facilities (MTFs) use programmed logic and computing power to obtain the best share price for a customer order from a number of markets that quote prices for the relevant stock. To achieve the best possible result for a user, a number of execution factors will be taken into account, including price, fees, speed, size of staked pool in general, and size of the staked pool specific to the digital asset class, and the rates of return for monetisation of the asset if the user has opted to appoint the ICN to leverage the asset for value. To aid best execution, the units of insured custody will be normalised. Specifically, prices will be for 1 day, 1 month and 1 year for each quoted digital asset type, for example to offer the price for insured custody of 1 BTC for 1 month.

Token Mint for OWN & OWNG:
When a transaction receives its guarantee of validity and of finality from a Validator Note, the hash of the transaction along with the ICN identity are passed from the Validator Node to the Owncoin Mint. The Token Mint builds a block of transactions and commits a hash of the block to the Tier 1 chain. The ICNs receive a transaction fee from Token Mint.

The supply to OWN tokens will increase with the growth in its adoption and use of the Ownernet. A significant allocation of OWN coins will be reserved as incentive for early adopters as Insured Custody Nodes, and for early users and developers. OWN coins will follow the ERC-20 standard and process.

A separate Owncoin permissioned governance token, OWNG, will be minted with a limited supply. OWNG will follow the ERC3643 standard, for financial compliance. Over time, OWNG will be made available to the community as investable security tokens that also carry governance rights. The phased release will align with the stepwise transfer of governance from the Ownernet Foundation to the Ownernet community.

Yield Opportunities Engine (YEO):
In order to reinforce market acceptance of Owncoin and the Ownernet, the protocol aims to integrate with a number of DeFi protocols and thereby further realise the DeFi vision of inter-operability of DeFi applications and further strengthen the DeFi movement. This will include integrations with existing and new innovative providers of opportunities to leverage value from digital assets on behalf of customers who trust their digital things to the Ownernet.

Service Guarantee Claims
Claims under the Ownernet Service Guarantee will be assess by decentralised Ownernet Claim Assessors, who must have a significant stake in the success of the network and a strong disincentive to act dishonestly. This will be achieved by requiring assessors to post a stake of OWN coins for the period in which the claim is assessed. If the Ownernet Governance Board finds an assessor to be acting dishonestly or against the interest of the service as a whole, it can burn the staked tokens. A quantity of OWN tokens will be allocated as an incentive to a broad community of members to assess and vote on claims of loss or damage to digital things while held under custody. The Ownernet Governance board will have the final say in the decision on pay-out on claims under the service guarantee.

Ownernet Governance Board

Ownernet aims to become recognised as the premier trusted authority and guarantor of safe custody of digital things. The core role of the Ownernet Governance Board (OGB) is to discharge that mandate in order to safeguard the interests of the community of users. The OGB will comprise leaders from the Ownernet Foundation and Ownernet Community.

Building the Initial Network Regulatory Capital

The launch of Ownernet as a DeFi service will require development funding, an ability to incentivise early adopters with accentuated crypto-economic reward and creation of market confidence in the financial robustness of the network. To that end, it is proposed to hold three/four rounds of funding.

- ❖ Seed Round of $3m-$4m

- ❖ Series A/ Series B: An offer of OWN tokens, at an average 50% discount to the expected listing price, to a group of strategic investors, that includes the provider of a chosen Tier 1 DLT and the exchange that will host the subsequent listing. The major criterion for identifying preferred investors will be the network effect that they can bring to the project. The size of the round will be in the region of USD $40m to $50m.

- ❖ IDO (Initial Digital Offer): A public and well-marketed IDO (Initial Digital Offer), on a chosen exchange, with a listing value in the range of USD $200m to $250m.

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