Hacash Layer3: A Multi-Chain System That Brings Sound Money Into The Daily Economy. By Hacash.com Team (2022).

This Hacash layer3 (L3) white paper is to describe the ecosystem and application landscape of Hacash's three-tier multi-chain, multi-ledger, multi-technology scaling and programmable economy platform proposed by Hacash.com team.

Detailed descriptions and code proofs of the L3 technology implementation will be given in the next "Hacash Layer3 Yellow Paper".

Based on Hacash Sound Money

Hacash (ㄜ) is a decentralized crypto currency system (L1). It consists of three PoW coins with different purposes. The symbols for these three coins are HACD (Diamond), BTC (One-way transfer) and HAC. HACD and BTC can adjust the supply balance of HAC. They can transfer peer-to-peer or exchange with each other on the Hacash chain. Hacash was invented by an unknown person or team in 2018 and began use in 2019. Also, Hacash's white paper describes in detail a way to enable HAC and BTC large-scale payments and real-time settlement (L2).

The BTC on the Hacash network is moved from the Bitcoin main chain via one-way transfer technology, and is not another tokenized bitcoin by way of a cross-chain bridge, but is a direct, real and irreversible BTC transfer into the Hacash chain. One of the key missions of Hacash is to be compatible with and inherit Bitcoin via one-way transfer technology, incorporating BTC along with HACD and HAC to form a systematized, complementary sound monetary system.

Hacash pursues a singular goal: to achieve a more sound money for humanity, rather than finding additional alternative application scenarios for blockchain. The “money” problem (or crypto as a form of currency within a monetary system) is the most significant and urgent problem for blockchain and crypto to solve. Even small optimizations to money can lead to huge improvements in the economic efficiency of society as a whole.

L3 is based on the Hacash Sound Money System (L1 and L2), which enables a higher-level programmable, cross-chain, customizable multi-chain protocol scaling network.

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What is Hacash L3

Based on the white paper by Hacash, which describes a main chain for currency creation, distribution and settlement (L1-currency layer) and a channel chain payment network for large-scale real-time settlement (L2-payment layer), this white paper proposes a programmable third layer of scalable multi-chain systems (L3-application layer).

In essence, L3 is similar to the cross-chain/multi-chain systems of Polkadot or Cosmos, but with a higher degree of technical adaptation and optionality, and without any token pre-allocation mechanism or official control over the protocol.

Here are the 7 dimensions of Hacash L3's functionality and features:

Scaling

The main network of Hacash is responsible for currency creation, distribution and settlement. In order to maintain a high degree of decentralization, the block size and the interval are both limited, and the average TPS is around 20. The channel chain settlement network solves the problem of large-scale real-time payment by putting the currency payment scenario into L2. Technically, it realizes no escrow of funds and no security problem for transactions, and theoretically achieves unlimited capacity scaling.

However, the channel chain has three inconvenient problems of opening the channel in the main network, keeping the payee online and the channel payment limit. L3 will make trade-offs from other aspects, such as decentralization, to solve the convenience of HAC and BTC payments while achieving uncapped expansion, and become a small, programmable and diversified payment platform to further enhance the scalability of Hacash system capacity.

Assets

The Hacash mainnet does not support custom asset issuance based on controlling the size of the general ledger and excluding invalid historical data to maintain strict decentralization. A real

economy cannot exist without the free issuance and large-scale trading of various assets, and L3 will take on the function of expanding the asset classes of the Hacash economic system. Backed by a common, one-click deployable base protocol, it provides a reliable technical environment for the issuance, maintenance and trading of each asset through a multi-ledger, multi-chain approach.

Programmable

In order to maintain the security, stability, and efficiency of the Hacash L1, as well as to take into account the diverse needs of lightweight, embedded, and mobile full-node devices, the Hacash L1 does not support Turing-complete smart contracts.

The L3 multi-ledger and multi-chain system can put the security of smart contracts under a "firewall", so that a vulnerability in a local user's business will not affect the safe operation of the currency layer and payment layer. This allows for flexible exploration of various programmable currencies and financial needs, while isolating risks to a limited extent and allowing for incremental, non-stop fixing of vulnerabilities.

Cross-chain

L3 is essentially a multi-chain system. Each asset, each organization, and each technology innovation can launch a separate chain to access Hacash's diverse economic system. There will be a set of basic protocols and interface standards for cross-chain asset, communication and contract invocation between chains and chains, and between ledgers and ledgers. To achieve multi-chain interoperability and interconnection of all chains.

Privacy

On one hand, consumers and businesses prefer the decentralization and transparency of blockchain; on the other hand, they also want to protect their property and information privacy.

L3 will not only be used for scaling, but also for non-scaling needs such as privacy. L3 can support all kinds of privacy techniques, such as coin mixing and zero-knowledge proof.

Customizable

L3 is not a "chain", but a set of customizable protocol standards. On top of the basic common protocol, users can choose different technologies or existing modules according to the interface specification, and combine them to create customized solutions or technical innovations.

Each chain can be freely customized by choosing a completely different programming language, contract type, contract virtual machine, consensus mechanism, ledger type, etc., weighing security, decentralization, uniqueness of requirements, etc. to meet specific needs.

Application

If we could issue a separate chain for each Web3 application and share and review the ledger only between stakeholders, and if we could customize the application with more advanced technology modules based on the underlying protocol support, this would bring a great deal of technical flexibility and data control, with a balance of functionality and security.

Hacash L3 Applications

Hacash L3 does not pre-determine any evolutionary direction or applications, but rather serves as a technologically neutral, underlying multi-chain protocol to support diverse and continuously evolving business needs in order to achieve the goal of bringing sound money’s Hacash into the real daily economy.

Payments

L3 serves as a scaling layer for Hacash to allow for larger, programmable cryptocurrency payments, such as micropayments, streaming payouts, etc., and supports both HAC and BTC.

Stablecoins

L3 serves as the asset layer of Hacash, supporting the issuance and management of any kind of assets, including collateralized stablecoins (e.g. USDT) or algorithmic stablecoins. Stablecoins serve as an transition between fiat money and fiat-denominated assets in the Hacash system, helping the traditional economic world to migrate incrementally to the crypto-economic system

Programmable Loyalty Points & Shares

In the daily economy, the main economic agents (enterprises) generally issue two types of assets: 1) loyalty points (for customers, to reward regular customers or enhance customer loyalty); 2) shares (for shareholders, representing the right to ownership and benefit distribution of the company). L3 supports enterprises to issue and manage these two types of assets through a separate ledger. The adoption of open source technology solutions and common asset standard protocols can greatly simplify and reduce the complexity and cost of asset management, and enable interconnection between different types of assets.

Asset Tokenized & Trading

Assets such as real estate, art, jewelry, stocks, bonds, etc. can be tokenized and registered on L3 to be identified and traded in a separate ledger.

DAO Token & NFT

DAO or communities can issue internal tokens at low cost and can optionally open up some information or keep it completely private. NFT can also be issued on L3, traded through a base protocol, or with more customized modules to manage assets.

Financial Derivatives

Using HAC and BTC as the cryptocurrency base, we unite more issued asset classes, such as stablecoins, bonds and other assets, to create more financial derivatives, such as perpetual futures or options, so that market participants with different risk appetites can participate to earn profits or hedge risks.

DeFi Innovations

Hacash believes that the biggest adoption in the crypto space is sound money and the open financial needs derived from it. L3 can be used to build this ecosystem of protocols, platforms, applications and tools for open financial products. L3 wants to build a peer-to-peer financial system with transparency, no barriers and inclusiveness through a distributed open source protocol that minimizes trust risk and makes it easier and more convenient for participants to access all types of financial support.

Hacash L3 Business Opportunities

In a long-term efficient economy where there is both a demand for services and a supply of products, L3 generates many profitable business opportunities while meeting the open financial needs of more users.

Cloud Computing Services

Each token and each demand in L3 can create a ledger or a chain independently, and most of them have roughly the same requirements and functions. Just like the value created by today's cloud computing, while L3 users can create their own ledgers or run full nodes on any computer, for developers of commercial services and some general users with non-technical backgrounds, using a ledger or chain deployed on the cloud with a single click will greatly reduce their operational burden.

Ledger & Transaction Audit Services

L3 is not a "one chain", but a multi-chain system. This will, to some extent, lead to the independence of ledger auditing, i.e., each chain will need to be audited separately, unlike those chains scaling at Layer1, which only need a high-level computing device with the required performance to audit all transactions and state. It will be possible to generate independent and reputable third-party on-chain auditors within the L3 economy. Provide a trusted one-time audit service for most customers who are not comfortable auditing their own ledgers, or act as a third-party node to do ongoing blockchain audits.

Wallets & Block Explorers

Like all public chains, L3 is a separate protocol and interface standard that requires separate development to support L3's wallet and block explorer. In short, we need L3 versions of MetaMask and Etherscan services.

Decentralized Exchanges

Diverse types of assets can be issued on L3, and these assets can be transferred between chains or atomically swapped via cross-chain protocols, but these are only supported by

interfaces at the protocol level. For most users, they cannot deal directly with the code calling interface, but must have a more convenient user interface. Products that provide this interface earlier will become decentralized exchanges used by more users and become the gateway to the flow of funds.

Crypto Payments

Whether it is for crypto-native currencies such as HAC, BTC or stablecoins such as USDT, the need for payments is a very significant one. Payments can be made via L2 channel chain payment networks or L3 layer payments, it can be difficult for the average user to distinguish the technical differences and cautions involved. Crypto payment companies that are familiar with these technical specifications will handle these technical details instead of the user, providing a more convenient and user-friendly payment service.

Disadvantages of Hacash L3

Hacash L3 is the third layer of Hacash's multi-chain network that achieves the advantages of unlimited scalability, Turing-complete smart contracts, customizable technology modules, and controlled risk isolation. However, it is not perfect, and there are some technical trade-offs, with trade-offs in both security expenses and composability dimensions.

Increased Expense for Ledger Audits

Theoretically L3 can create an infinite number of ledgers, an infinite number of blockchains, each of which is secured only in relation to the stakeholders (coin holders) of that chain, lacking the security of the entire community of miners or validators. This brings the ability for unlimited scaling and, at the same time, results in users having to audit those ledgers that are relevant to them. For the average user, this decentralized verification adds its own costs. The key to solving

this problem is a third-party-operated cloud infrastructure that helps users "one-click sync" their ledger, reducing the complexity of such autonomous verification.

Reduced Composability & Interoperability

All multi-chain systems (including sharding based system) have combinability weaknesses, and L3 is no exception; Hacash's goal is sound money, and the goal of L3 based on this is open finance, which requires more integration with daily economic behavior than just creating nested "DeFi Lego" on a chain. " A set of basic cross-chain protocols can meet the needs of L3 users for asset transfer and atomic swap, so that the base layer is interconnected while the top layer is risk isolated.

Conclusion

This white paper addresses the definition, applications, business opportunities, and potential disadvantages of L3, a multi-chain architecture that addresses many of the issues facing the blockchain space today, including scalability, technology customization, risk isolation, and seamless updates, providing an open economic ecosystem development foundation for a high-quality crypto-sound money.