

Keeta

PRODUCT MANUAL



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Introduction

Keeta Network is a new technology built from the ground up to revolutionize global finance by addressing longstanding challenges in the financial sector. It rests on four key technical pillars: a data structure that enables scalability, a governance system adaptable to evolving needs and regulations, advanced security measures for the protection of financial transactions, and data access that balances transparency with privacy requirements. Together, these elements create a financial ecosystem that is faster, more secure, and adaptable to future demands.

Keeta's proprietary infrastructure streamlines interbank transactions, addressing current inefficiencies and providing a platform for future innovation in global finance.

Data Structure

Keeta's approach to blockchain technology centers around its use of a Directed Acyclic Graph (DAG) structure, representing a departure from traditional blockchain architectures.

In this system, transactions are linked in a multi-dimensional web rather than a single, linear chain, allowing for parallel processing that increases the network's throughput and scalability.

Unlike traditional blockchains, which struggle with scalability issues due to their linear nature and sequential transaction processing, Keeta's DAG-based system can handle a high volume of transactions simultaneously. This parallel processing eliminates the bottlenecks that plague traditional systems as network activity increases, enabling Keeta Network to scale efficiently as it grows.

Fig. 1: Traditional Blockchains

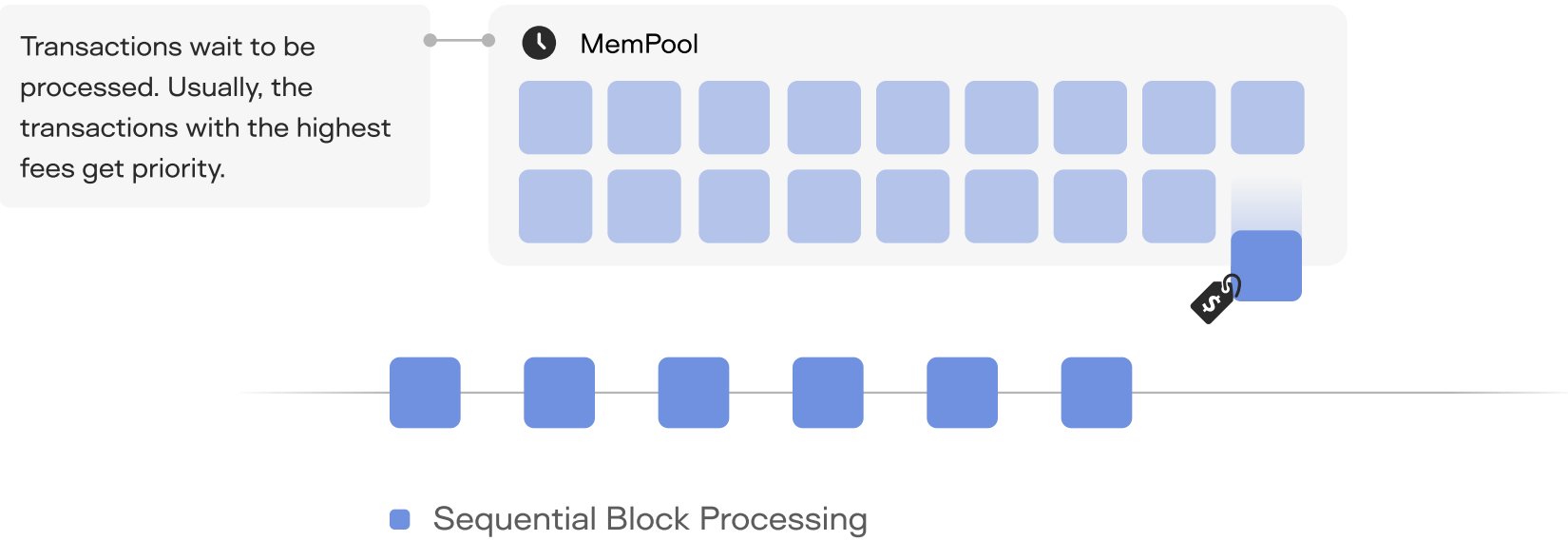
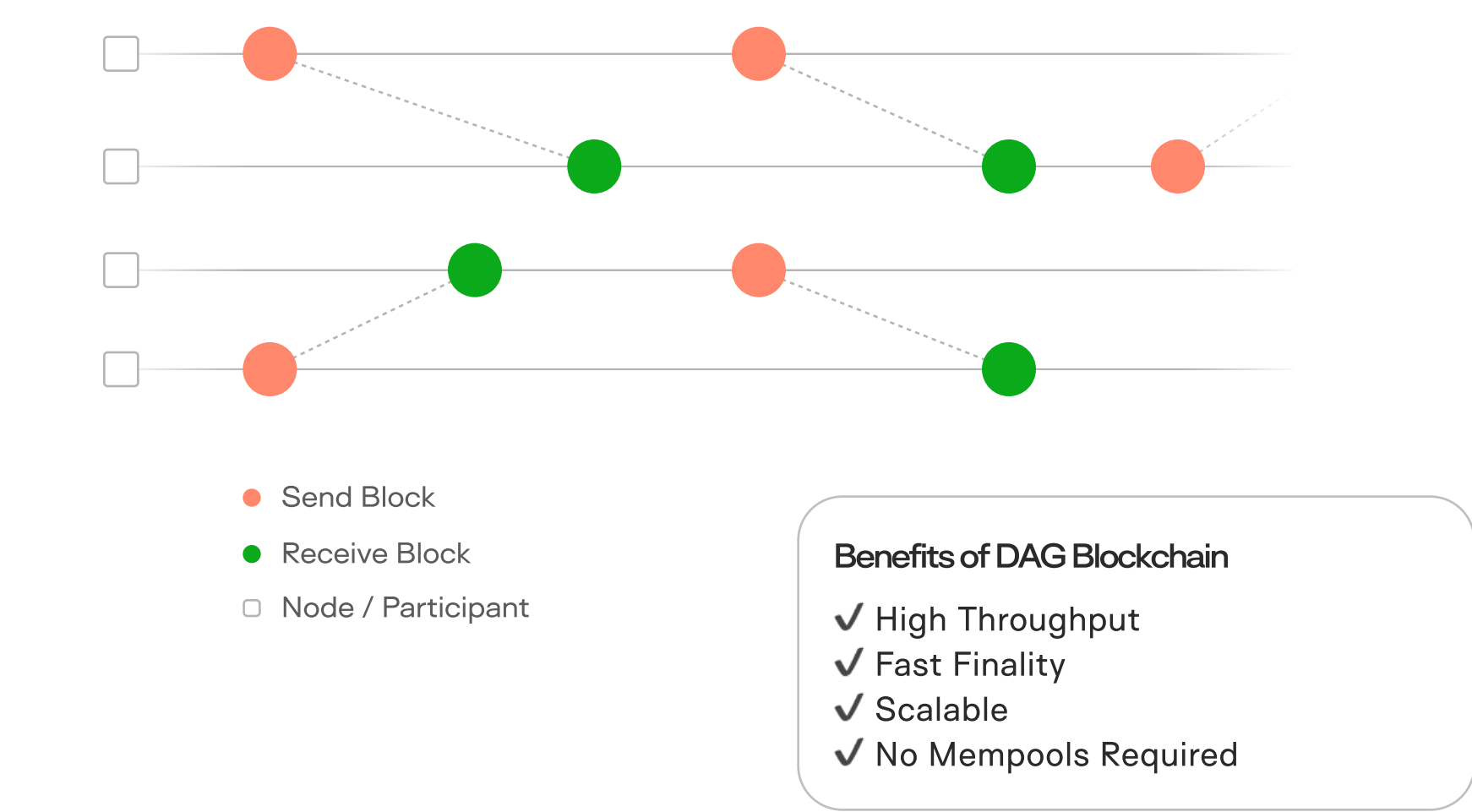


Fig. 2: Keeta's DAG Blockchain



Elimination of Mempools

A key innovation in Keeta's system is the elimination of memory pools, or "mempools." In traditional blockchain networks, mempools serve as waiting areas for transactions before they're added to a block. This can lead to delays and increased transaction fees during periods of high network activity. Keeta's architecture bypasses this issue entirely. By leveraging the DAG structure and advanced consensus mechanisms, transactions can be quickly validated and incorporated into the network without the need for a mempool intermediary. This results in fast transaction processing and significantly reduced fees.

Solving the Blockchain Trilemma

Keeta's approach addresses the long-standing blockchain trilemma – the challenge of achieving decentralization, scalability, and security simultaneously. Traditional blockchain networks sacrifice one of these aspects to enhance the others. However, Keeta's DAG structure, combined with its Delegated Proof of Stake (DPoS) consensus mechanism, allows for a harmonious balance of all three elements. The DAG structure provides scalability, while the DPoS system ensures decentralization and security through its validator selection process.

Fig. 3: Direct Consensus Mechanism

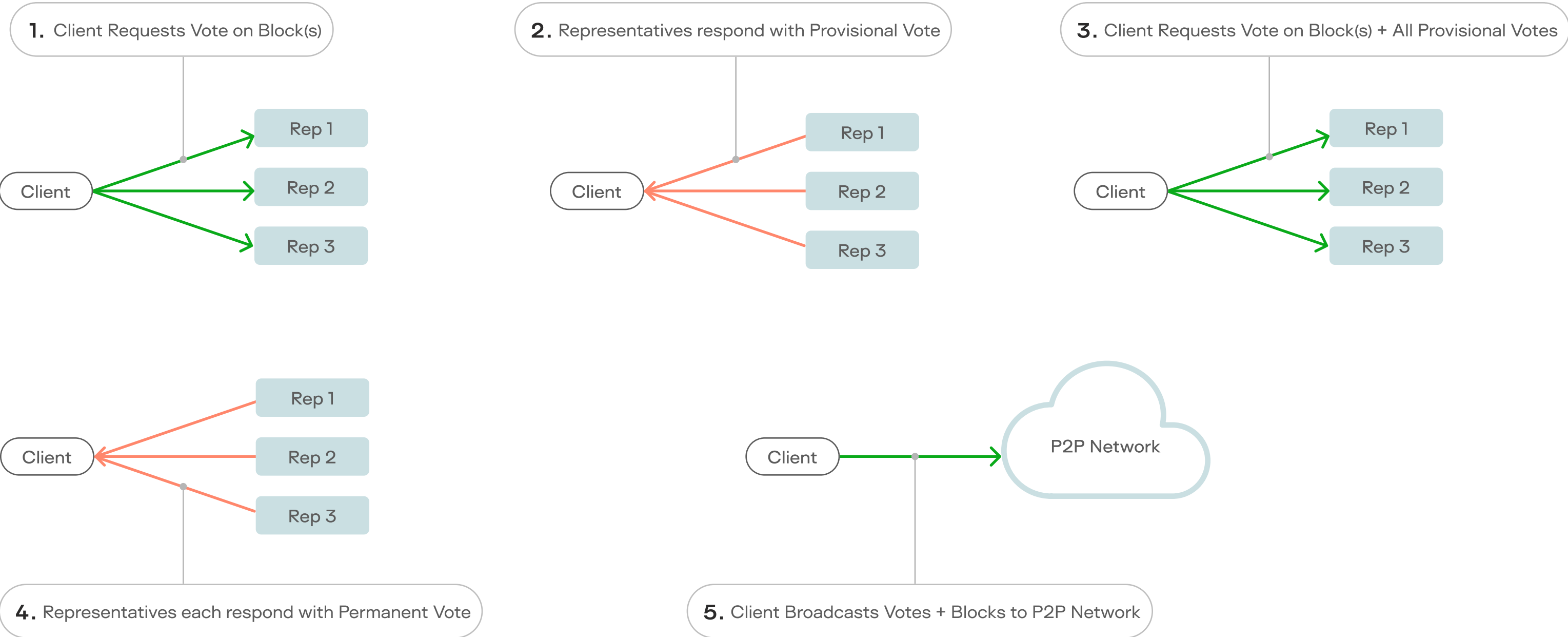
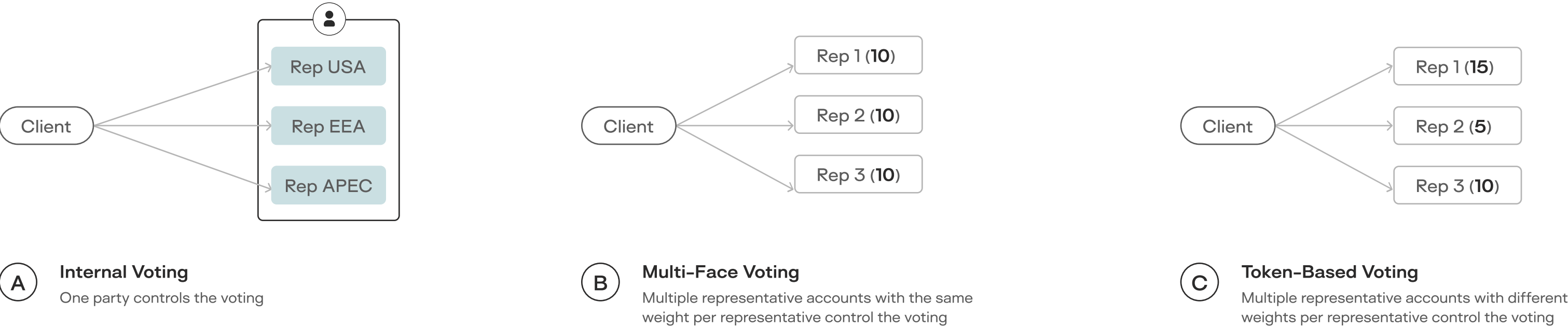


Fig. 4: Different Types Of Voting



Voting Structure

Keeta's voting structure provides governance that can adapt to various organizational needs while maintaining efficiency and security. At its core, Keeta Network utilizes a Delegated Proof of Stake (DPoS) system, which allows for quick consensus while ensuring a degree of decentralization. This structure supports different voting modes, enabling customized governance models for different use cases within the Keeta ecosystem.

- A Internal Voting**
Designed for scenarios where a single party has primary decision-making authority. This type is ideal for organizations with centralized governance structures or for decisions that require quick, authoritative responses.
- B Multi-Face Voting**
Different groups or stakeholders have a say in decision-making processes. It promotes a more decentralized approach to governance, enabling diverse perspectives to be considered in the decision-making process.
- C Token-Based Voting**
In token-based voting, the weight of a participant's vote is proportional to the number of tokens they hold. This type of voting aligns decision-making power with economic stake in the network.

Fig. 5: Key Pairs Can Be Generated By A User

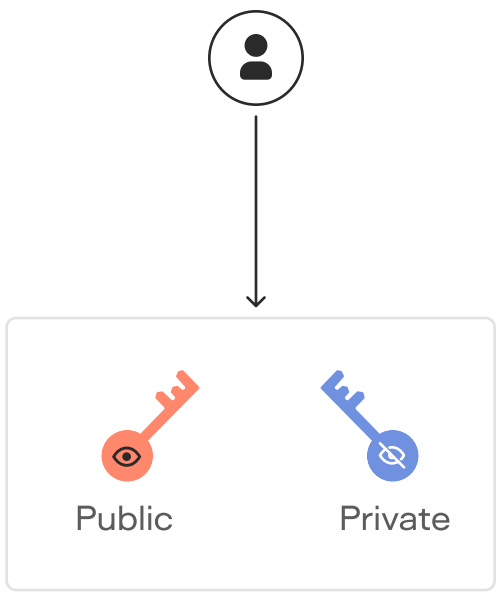


Fig. 6: The Private Key Signs Transactions. The Public Key Can Verify Authenticity To Other Parties.

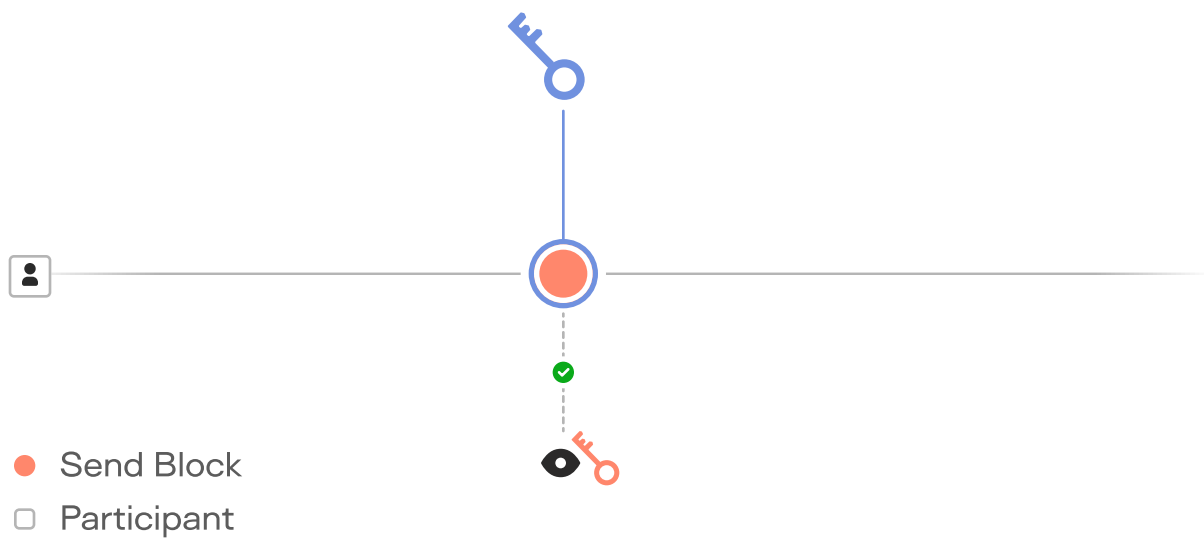
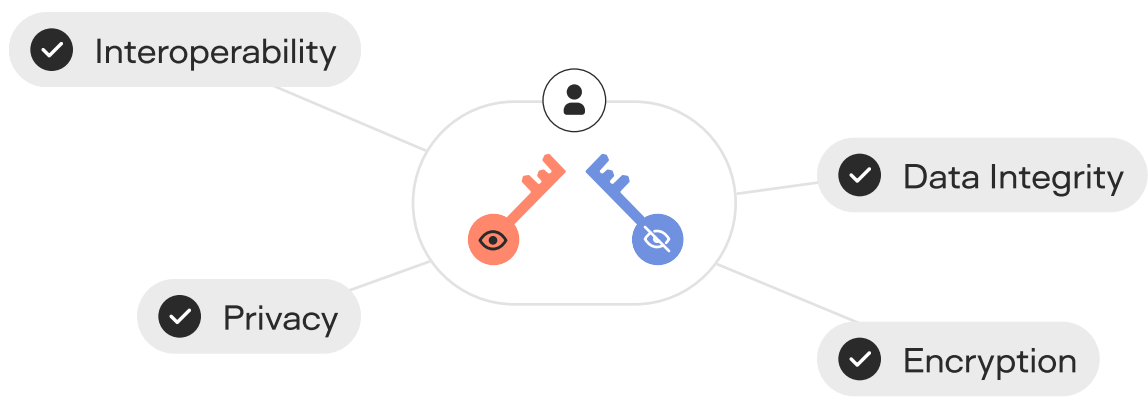


Fig. 7: Key Pair Advantages



Participants

Keeta Network is designed to accommodate a diverse range of participants, from individual users to large financial institutions, each with unique needs for security, privacy, and access control. This section outlines the structure Keeta has implemented to manage network participants and their addresses, ensuring a balance between flexibility, security, and user empowerment.

Understanding Key Pairs in Keeta: Balancing Security and Flexibility

In the world of digital transactions, a key pair is like your personal lock and key set. It consists of a public key that can be freely shared, and a private key is kept secret. On Keeta Network, when a user makes a transaction, they use their private key to 'sign' it, creating a unique stamp. Anyone can then use your public key to verify that you, indeed, created the unique stamp—similar to how a bank verifies your signature on a check, but much more secure and impossible to forge.

Keeta Network allows participants to manage their own key pairs, offering flexibility and security. The user has direct control over their transactions – no party can act on their behalf without their private key. Even if someone obtains your public key, they can't use it to make transactions or access your assets; only the private key can do that.

This key pair system brings several advantages to Keeta. It ensures transactions are secure and tamper-proof, providing an accurate record of what party made each transaction – crucial for financial operations. Whether an individual makes a single payment or a bank manages millions, Keeta's key pair system provides the security and flexibility needed in today's digital financial world.

Cryptographic Standards and Post-Quantum Readiness

Keeta's approach to cryptography blends current security best practices with future-proofing strategies. The network currently supports two widely used cryptographic algorithms for private keys: ECDSA (Elliptic Curve Digital Signature Algorithm) and ED25519, ensuring robust security and compatibility with existing systems.

However, Keeta's true strength lies in its cryptographic agnosticism, which positions the network for post-quantum compliance. This design allows Keeta to introduce any post-quantum cryptography without necessitating changes to the core system, adapting to future cryptographic standards that can withstand potential threats from quantum computing. This approach is crucial for long-term cybersecurity and makes Keeta unique in the blockchain space for having achieved this level of preparedness for the post-quantum era.

Key Storage Options

Keeta provides multiple options for key storage to cater to different security needs and use cases. For high-security applications, Hardware Security Modules (HSMs) can be used to store private keys, providing an additional layer of protection against unauthorized access. For more consumer-oriented applications, on-device storage solutions can be utilized.

For example, a secure financial app on iOS could store private keys within the Secure Enclave on the user's device, giving them immediate access to their accounts and transactions. This approach ensures that sensitive data remains protected by hardware-level security, while still allowing for quick and convenient user interactions with their financial information.

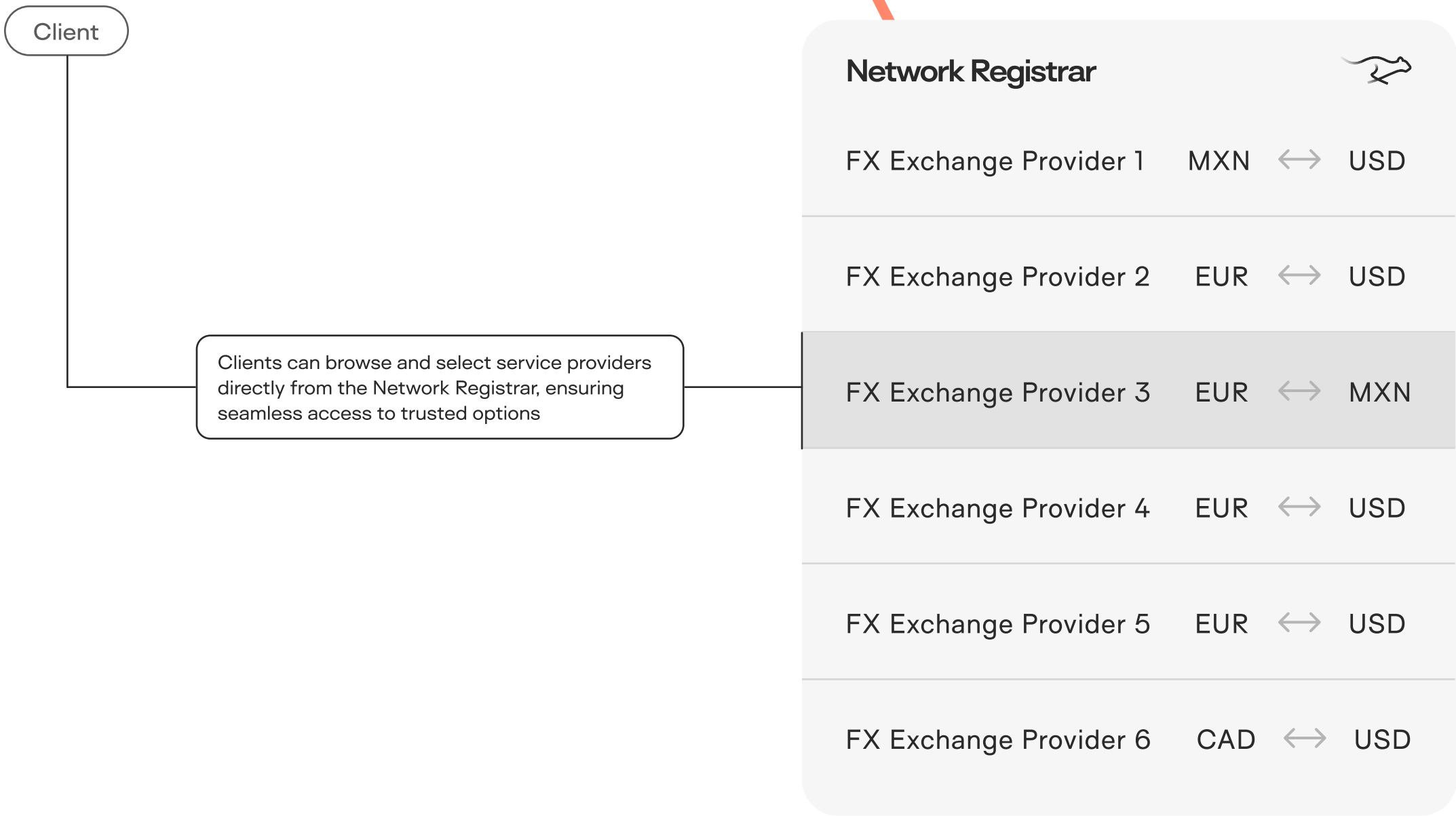
Network Registrar

The Network Registrar on Keeta Network serves as a central directory where participants can discover essential services like foreign exchange (FX) providers, final delivery options, authorized tokens, and local payment providers. Acting as a lookup system for tokens, it allows users to determine the creator of a specific token (e.g., who created X token), making it simple to determine the validity of a token.

To offer flexibility and decentralization, the network supports multiple Registrars. While Keeta provides a primary Registrar, nodes have the option to create and reference a Registrar of their choosing.

By offering a configurable and transparent Registrar system, Keeta Network improves navigation and interaction within its ecosystem. Participants can efficiently find and verify key services and token identifiers, creating a more transparent and efficient network.

Fig. 9: Picking A FX Exchange Provider



Scalability in Keeta's Architecture

Keeta's architecture separates nodes from servers, allowing multiple servers to support a single node. This design enables both vertical and horizontal scaling without downtime, maintaining consistent transaction throughput even under heavy loads and avoiding common network bottlenecks.

Unlike traditional blockchain systems where nodes and servers are combined—requiring nodes to go offline for hardware upgrades—Keeta's approach permits seamless hardware enhancements while keeping the network operational. This method delivers high performance without compromising decentralization or efficiency.

By decoupling nodes from the underlying hardware, Keeta ensures that scaling and upgrades can be performed without disrupting network availability. This flexible architecture sets Keeta apart from competitors, providing continuous operation at full capacity during expansion or maintenance activities.

Optimized for cloud infrastructure, the network is ideal for enterprises seeking scalable, distributed solutions in cloud environments. Its design leverages cloud capabilities to enhance performance and scalability, making it suitable for businesses aiming to deploy blockchain technology within cloud-based systems.

Fig. 10: Keeta Scales By Separating Servers And Representatives In Its Architecture

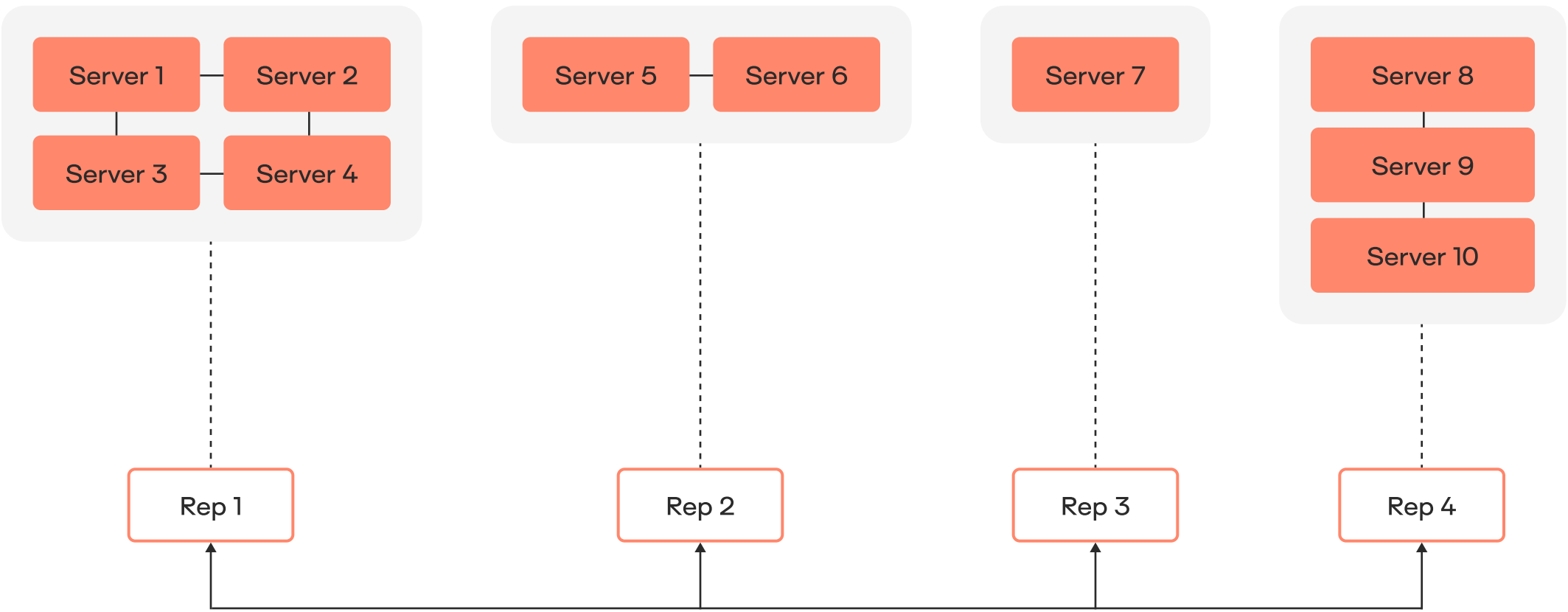
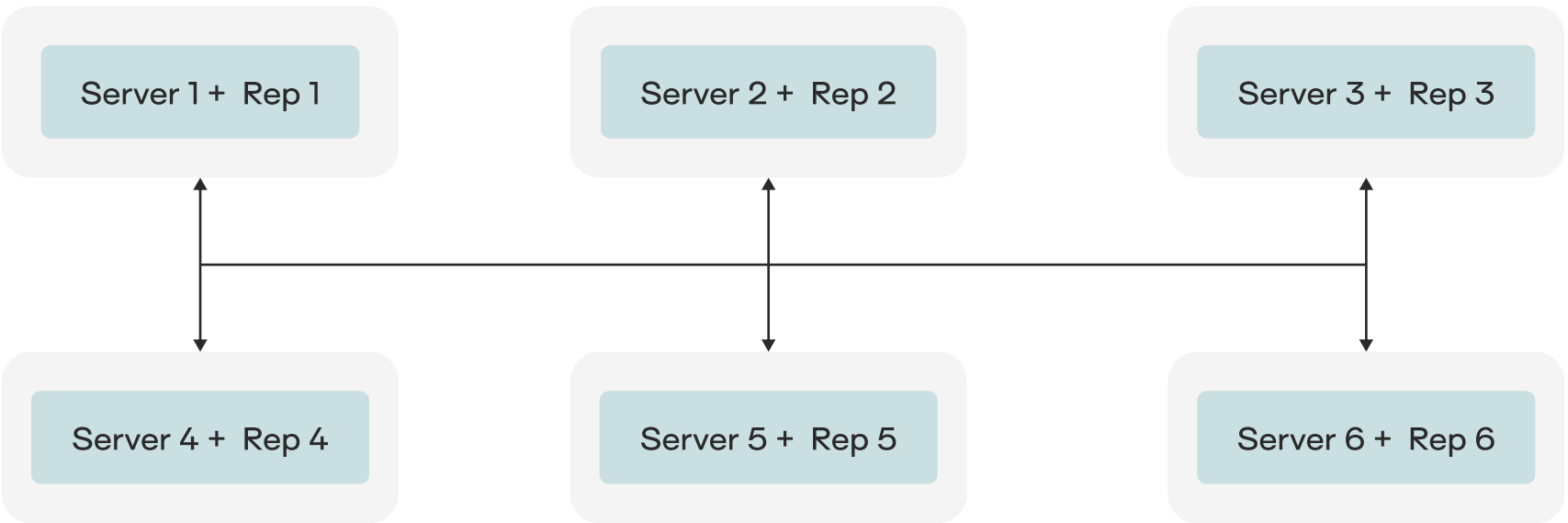


Fig. 11: Traditional Architecture: Coupled Servers And Representatives





Hyperledger Fabric vs. Keeta

Hyperledger Fabric, developed under the Linux Foundation in 2015, is an enterprise blockchain framework known for its focus on privacy and modularity within a permissioned environment. It offers flexible consensus mechanisms, supporting options like Raft and the Smart Byzantine Fault Tolerance (BFT) protocol. However, a significant shortcoming of Hyperledger Fabric is the absence of native tokenization. Instead of built-in support, it relies on external applications or chaincode to tokenize assets, making tokenization processes more complex and less seamless for enterprises that require quick and compliant asset transfers.

Keeta Delivers Faster, More Secure Voting

Keeta excels in achieving quick transaction finality due to its two-phase voting system. This enables sub-second finality by first gathering temporary votes, then moving to permanent votes for secure validation. Hyperledger Fabric, on the other hand, can experience delays due to its reliance on leader election and block pipelining, which adds complexity to transaction processing. Keeta’s voting process makes it a better choice for high-speed, large-scale financial operations.

Keeta Excels at Native Tokenization & Compliance

Keeta offers an integrated solution with native asset tokenization directly within the blockchain, simplifying cross-border and multi-asset transfers. While Hyperledger Fabric allows for compliance mechanisms through its permissioned structure and customizable chaincode, Keeta embeds regulatory compliance measures like Know Your Customer (KYC) and Anti-Money Laundering (AML) directly into the platform. This built-in compliance enables financial institutions to meet regulatory requirements globally, making Keeta a more compliant and efficient solution for real-time international payments.

Fig. 12: Comparison Keeta Vs. Hyperledger Fabric

Keeta	Hyperledger Fabric
> 10,000,000 TPS	≈ 3000 TPS
< 400ms settlement times	≈ 4s settlement times
Delegated Proof-of-Stake	Kafka or RAFT
Built-in rules engine	External applications for tokenization via Chaincode

Fig. 13: Keeta Versus Hyperledger Fabric Tokenization

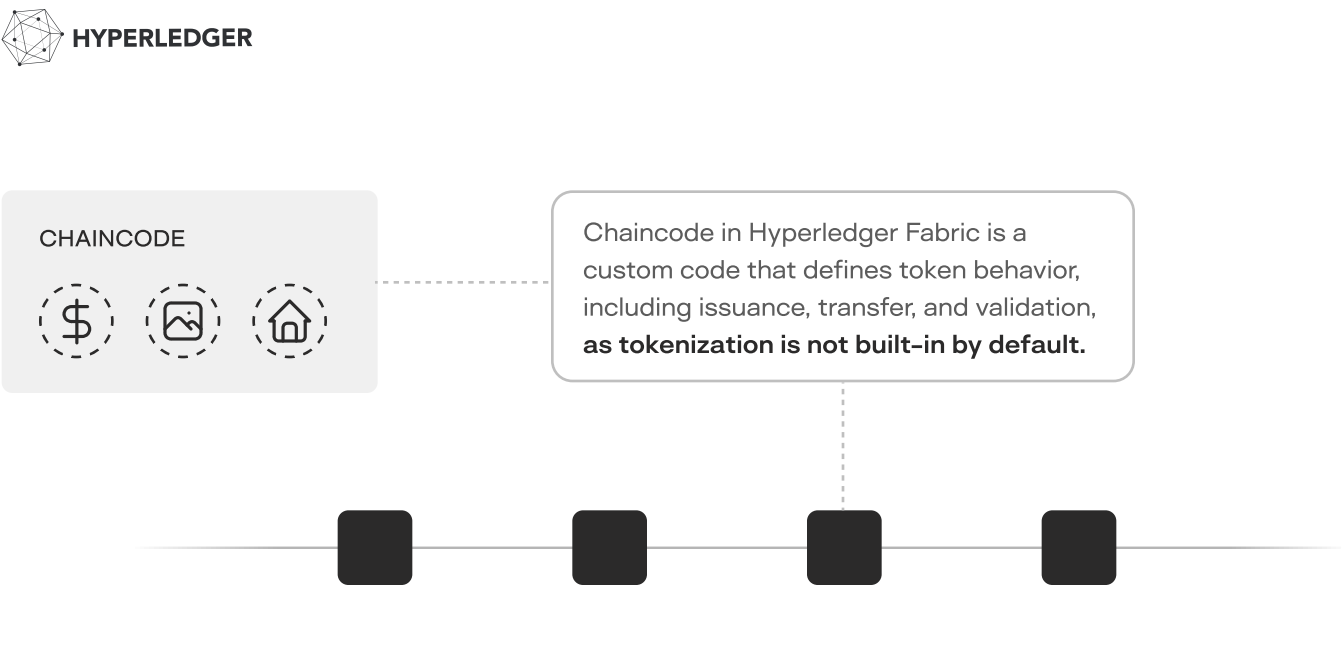
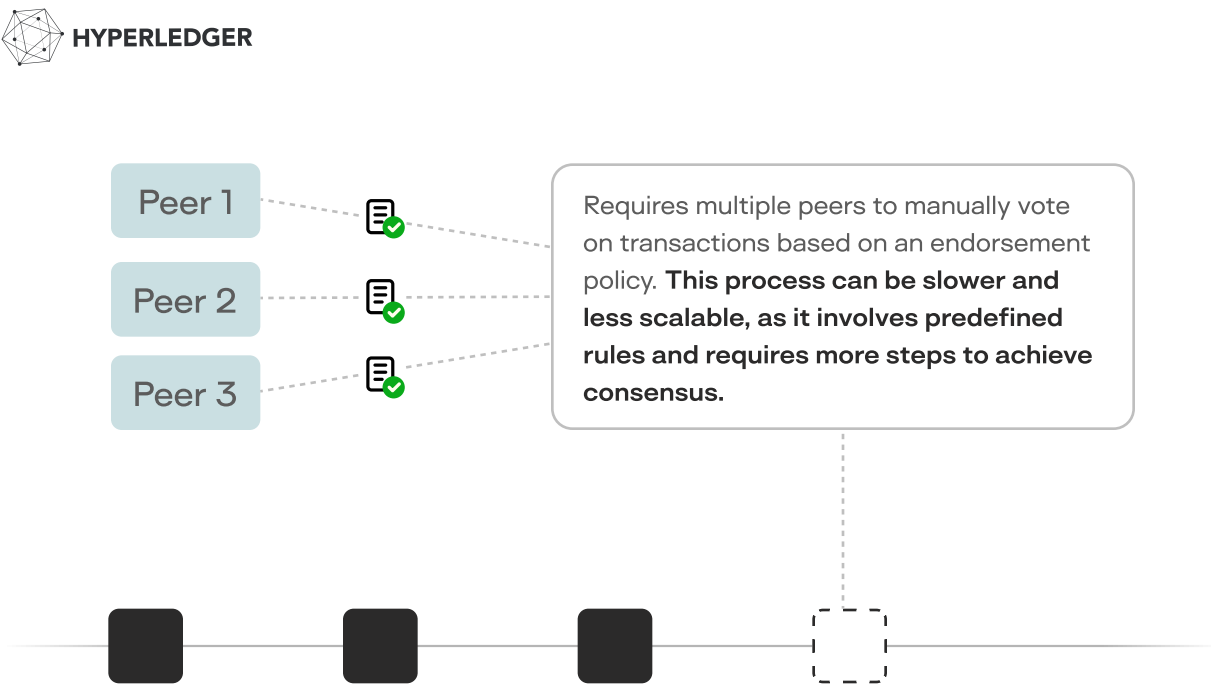
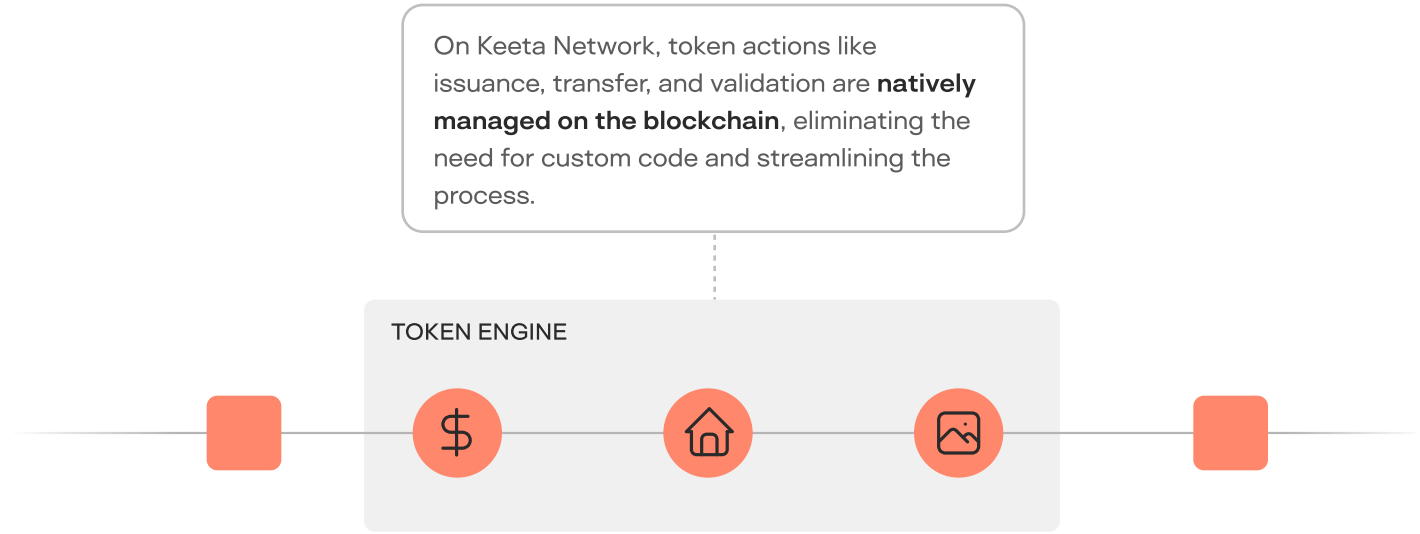


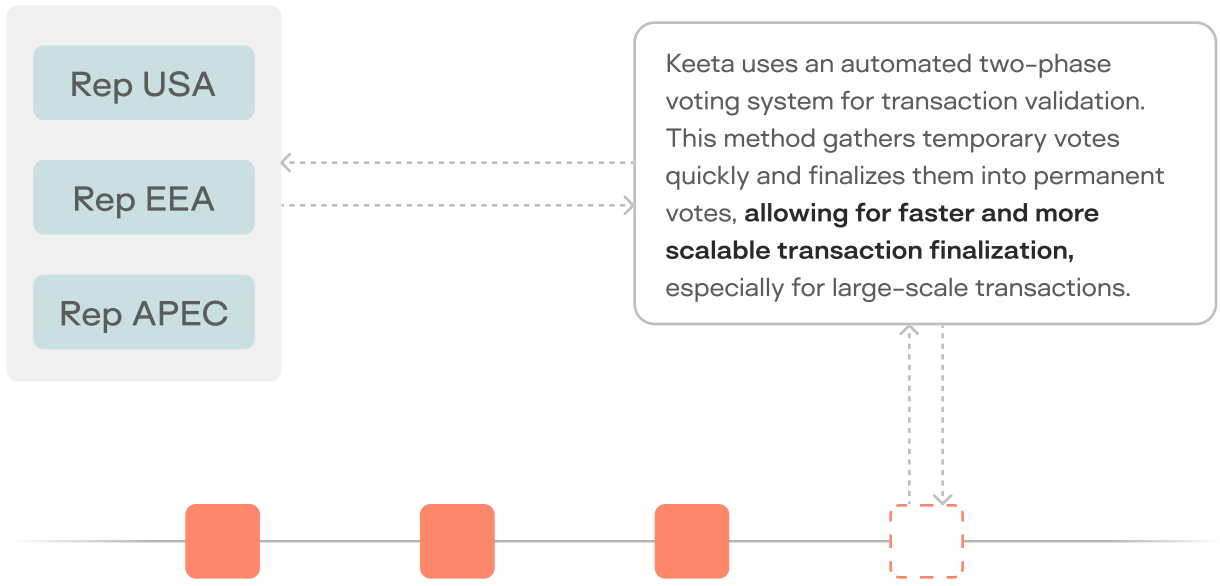
Fig. 14: Keeta Versus Hyperledger Fabric Consensus



Keeta



Keeta



Ethereum vs. Keeta

One of Keeta's key innovations is its built-in rule engine and tokenization system, eliminating the need for external smart contracts. While Ethereum has led in decentralized applications and smart contracts, it faces significant scalability challenges. To increase transaction throughput, Ethereum relies on layer-2 solutions like rollups, which introduce complexities and costs. These rollups batch transactions and later verify them on the main blockchain but have drawbacks like delayed finality and dependence on centralized sequencers, raising the risk of single points of failure.

Keeta avoids these issues by integrating scalability directly into its core architecture. Using a Directed Acyclic Graph (DAG) structure—a system that allows for multiple simultaneous transaction pathways—it achieves high throughput and near-instantaneous transaction validation without additional layers. Keeta's built-in mechanisms cover most of the use cases, rendering general-purpose smart contracts unnecessary.

Functionalities such as data access and identity management, often implemented through smart contracts on other platforms, are inherently built into Keeta. This ensures users can perform transactions and access services at minimal cost, regardless of network demand. The platform becomes more accessible to financial institutions and everyday users, offering a smoother and more predictable experience compared to Ethereum, which continues to struggle with high fees despite multiple upgrades.

In essence, while Ethereum is a well-established platform with a vast ecosystem, its reliance on general-purpose smart contracts introduces complexity and inefficiency. Keeta offers superior scalability and cost efficiency by providing built-in solutions tailored to specific needs without the overhead of smart contracts. This makes it a more attractive option for financial institutions and developers seeking a future-proof solution.

Fig. 15: Comparison Keeta Vs. Ethereum

Keeta	Ethereum
> 10,000,000 TPS	≈ 120 TPS
< 400ms settlement times	≈ 12s settlement times
Delegated Proof-of-Stake	Proof-of-Stake
Built-in rules engine	Custom Smart Contract Logic Required

Fig. 16: Keeta Vs Ethereum: Rollups

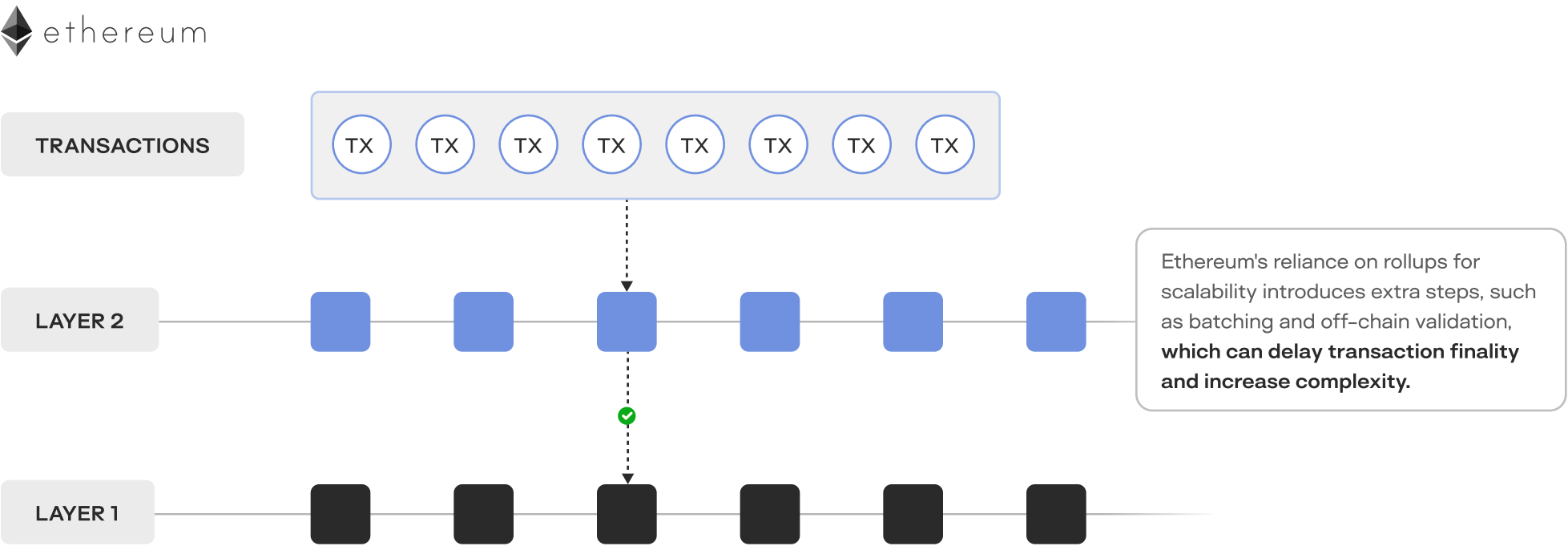
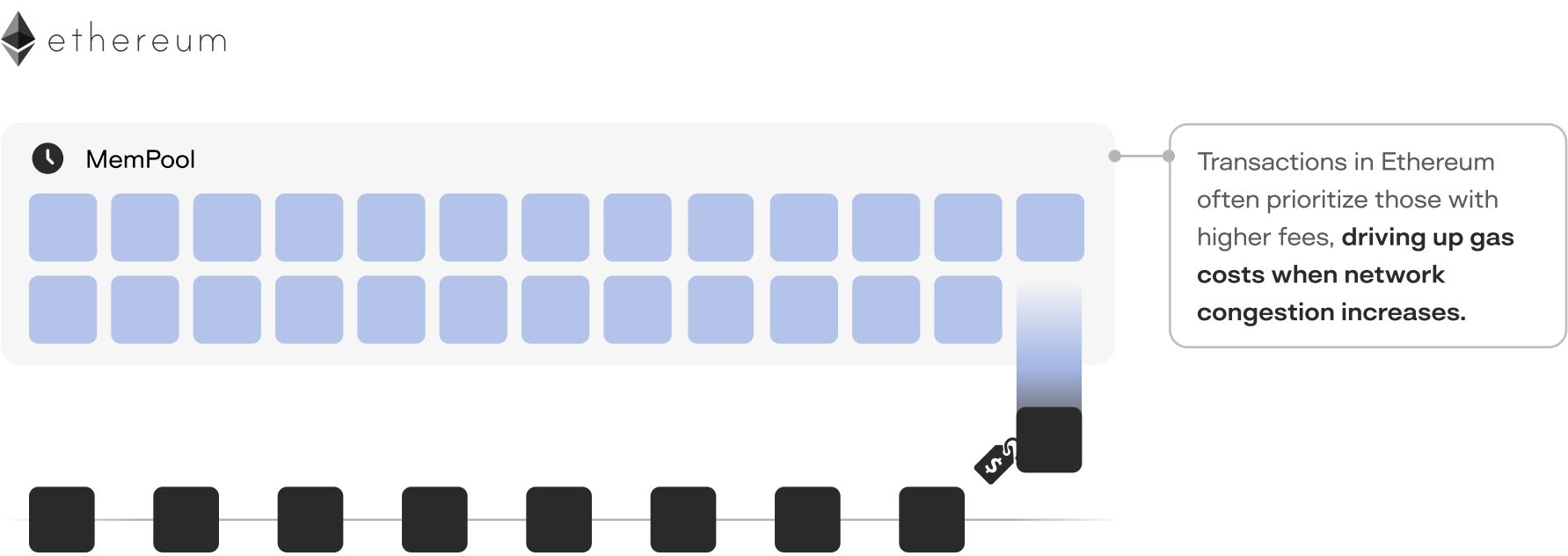
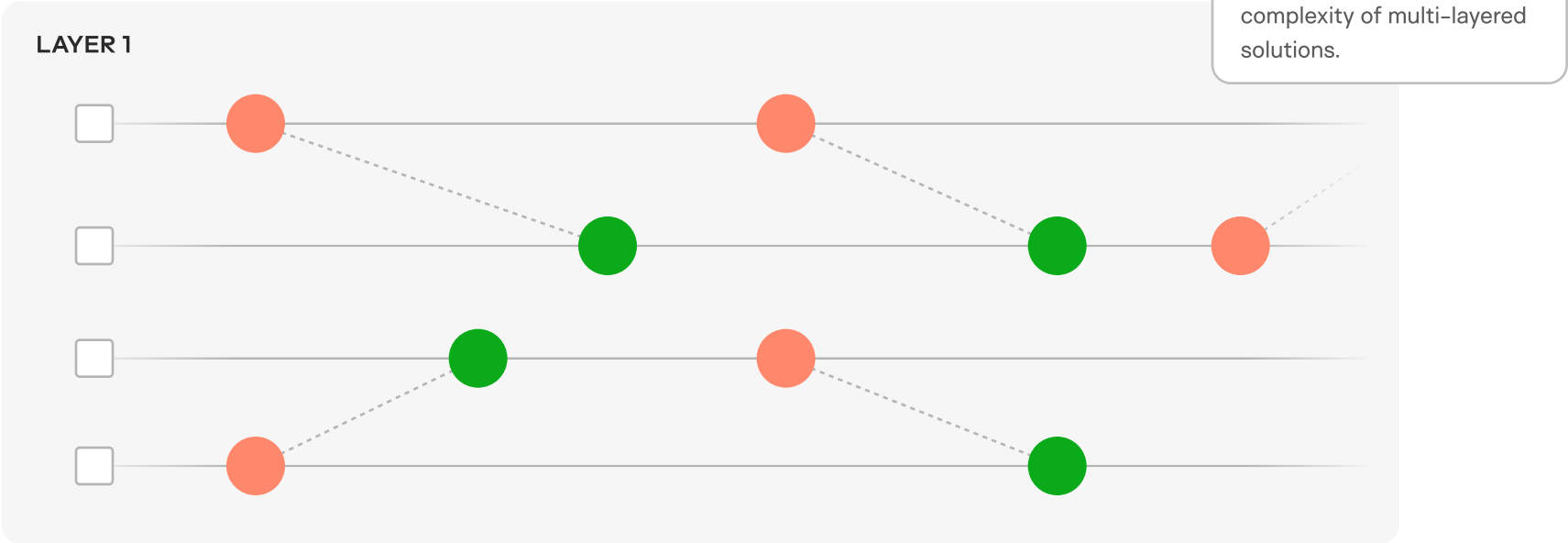


Fig. 17: Keeta Vs Ethereum: (Gas) Fees



Keeta

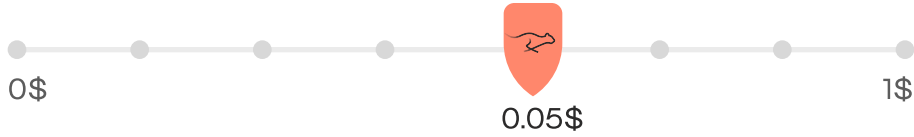


Keeta

Keeta's fee system is dynamic, allowing flexible configurations based on the preferences of the network owner.

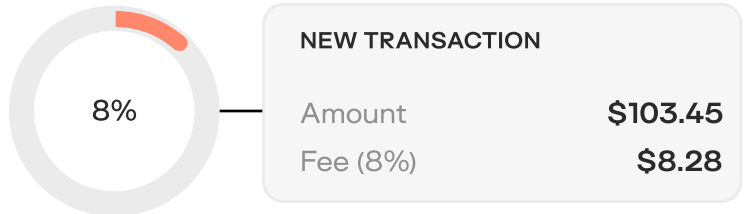
- 1

Set Custom Flat Fees
Network owners can set fixed transaction fees, allowing for predictable costs regardless of transaction value



- 2

Set Custom Percentage Fees
Network owners can implement percentage-based fees, scaling costs proportionally with tx amounts



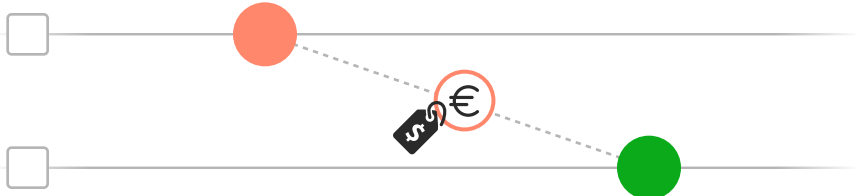
- 3

Zero Fee Option
Transactions can be configured with zero fees and/or through an external invoicing system, enabling cost-free transfers.



- 4

Fees and Currency Splitting
The fee can be charged in a different currency from the transaction.



Ripple vs. Keeta

Ripple has long faced criticism over centralization concerns due to its consensus mechanism, which depends on a limited number of trusted validators—fewer than 35—to maintain the ledger. With Ripple Labs operating many of these validators and holding significant influence over the network, it forces a centralized structure, increasing the risk of manipulation and governance issues. In contrast, Keeta offers the flexibility to be either decentralized or centralized, depending on the needs of its users. By employing Delegated Proof of Stake (dPoS) and a Directed Acyclic Graph (DAG) structure, Keeta allows for a broader, more decentralized set of validators to govern the network or enables institutions to operate in a more centralized manner if they choose.

Ripple's XRP Ledger lacks capabilities in tokenization, built-in rules, identity management, and flexibility for handling diverse use cases. Its functionalities are largely limited to payment-related operations, restricting its versatility. Although Ripple is developing more advanced programmability—such as Ethereum Virtual Machine (EVM)-compatible sidechains to enable smart contracts—these efforts are still in progress and may inherit issues similar to Ethereum, including scalability challenges and high transaction costs.

Keeta, on the other hand, eliminates the need for external smart contracts by incorporating a built-in rule engine and tokenization system that covers most of the real-world use cases. By avoiding the complexities of general-purpose smart contracts, Keeta inherently provides functionalities like data access, identity management, and customizable rules within the platform.

Fig. 18: Comparison Keeta Vs. Ripple

Keeta	Ripple
> 10,000,000 TPS	1,500 TPS
< 400ms settlement times	3-5 seconds
Delegated Proof-of-Stake	Ripple Consensus Algorithm
Native Token Implementation	Lacks Sophisticated Programmable Contract Capabilities

Solana vs. Keeta

Solana is known for its high throughput, achieving tens of thousands of transactions per second (TPS), a major selling point for its ecosystem. However, this speed relies on vertically scaling nodes, requiring each to have substantial hardware resources. Nodes must invest in high-end hardware, but scalability limits remain. Upgrading hardware often necessitates shutting down nodes, leading to downtime and reduced reliability.

Keeta achieves high TPS through a flexible architecture that separates nodes from servers. By utilizing multiple servers per node, Keeta allows both vertical and horizontal scaling on demand without shutting down nodes. This design enables seamless hardware upgrades and scaling, ensuring consistent TPS performance under heavy load while maintaining decentralization and reducing bottlenecks.

Regulatory compliance is another area where Keeta surpasses Solana. While Solana lacks built-in mechanisms for Know Your Customer (KYC) and Anti-Money Laundering (AML) compliance — critical for financial institutions — Keeta integrates these protocols directly into its platform. This ensures that institutions can easily adhere to legal requirements, making Keeta more attractive to banks and other entities operating in regulated industries.

Keeta's support for sub-nets and private networks also gives it an edge over Solana. While Solana operates as a single blockchain, Keeta allows users to create customized sub-nets or private networks that operate independently yet leverage the main network's security and scalability. This is particularly valuable for enterprises requiring tailored solutions with specific privacy or operational needs, offering a level of customization that Solana does not provide.

Fig. 20: Server & Representative Architecture Comparison: Solana Vs. Keeta

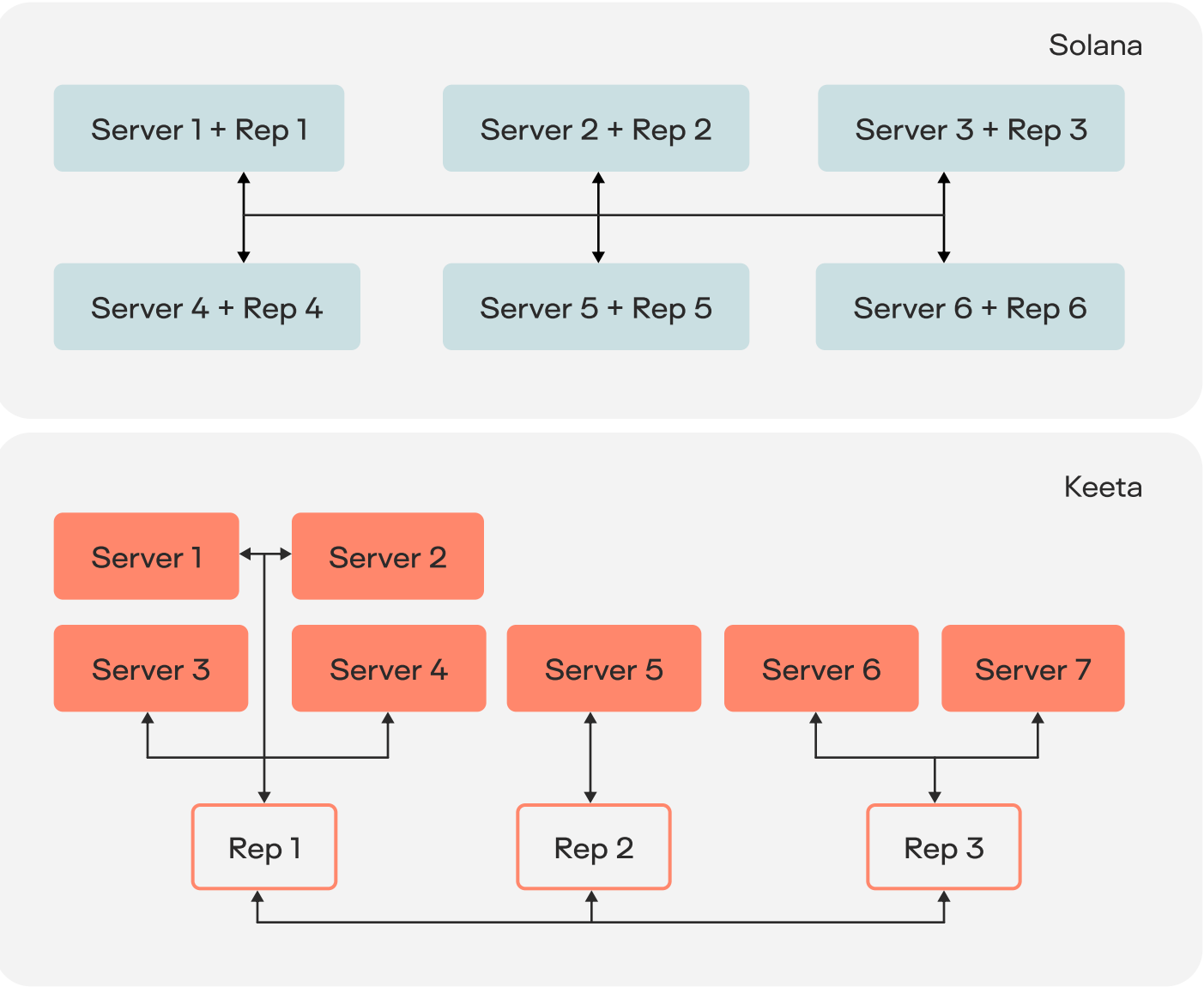


Fig. 19: Comparison Keeta Vs. Solana

Keeta	Solana
> 10,000,000 TPS	≈ 65,000 TPS
< 400ms settlement times	400–600 milliseconds
Delegated Proof-of-Stake	Proof of History & Proof of Stake
Native Token Implementation	SPL Tokens: Separate Standard for Creating/Managing tokens



Account Types

Keeta employs a sophisticated account system designed to accommodate various financial operations and user needs within its blockchain framework. This system incorporates multiple account types, each serving specific functions and possessing unique characteristics. Understanding these account types is crucial for users and developers engaging with the Keeta ecosystem, as it forms the foundation for interactions, transactions, and governance within the network.

Account Basics

Accounts are fundamental entities identified by either a public key derived from a key pair or a deterministically generated address. Each account, regardless of its type, maintains its own ordered blockchain within the network's Directed Acyclic Graph (DAG) structure.

This individual blockchain stores all blocks associated with the account, creating a comprehensive record of its activities and state changes. The use of a DAG structure allows for efficient parallel processing of transactions across multiple account chains, contributing to the network's scalability.

Keyed Accounts

Keyed accounts represent the primary means of user interaction within Keeta Network. Accounts consist of a private and public key pair, mirroring traditional cryptocurrency wallets. The private key, kept secret by the account owner, is used to sign transactions and votes.

The public key, derivable from the private key, serves as the account's address on the network. Keyed accounts are unique in their ability to initiate transactions, sign blocks, and participate in network governance through voting. This capability makes them essential for users who need to actively manage assets or participate in network decision-making processes.

Generated Accounts

Generated accounts are specialized addresses created deterministically from publicly available data. Unlike keyed accounts, generated accounts do not possess the ability to sign transactions independently. Instead, they serve specific roles within the network, often as programmable or automated entities. The creation of a generated account is a process that can only be initiated by a keyed account through a special operation. Once this operation is published, the address of the generated account is derived using a combination of the creator's address, the block hash, and the operation's index within the block.

This deterministic generation ensures that the account's address is unique and verifiable. Upon creation, ownership permissions are automatically granted to the creator over the generated account.

To publish a block to a generated account's chain, a keyed account with the appropriate permissions must sign the block on behalf of the generated account. This mechanism allows for the creation of accounts with specific, limited functionalities, useful for various applications such as escrow services, multi-signature wallets, or automated contract execution.

Operator Accounts

Each distinct network within the Keeta ecosystem possesses exactly one operator account. This account is generated from the unique numeric representation of the network itself. Network operator accounts manage network-wide permissions and configurations. For instance, to create new tokens on the network, the creator must have specific permissions assigned by the operator account.

Additionally, the base token for each network is generated from the address of its operator account. This centralized point of control for network-wide operations ensures consistent governance and resource management across the entire network.

Storage Accounts

Storage accounts represent a versatile account type designed to hold balances and serve as custodial accounts for funds. These accounts can be shared among multiple users or entities and can undergo complete ownership changes. The defining feature of storage accounts is their ability to implement custom rules regarding the types of tokens they can receive and who is permitted to deposit into them. This is achieved through Keeta's permission system, allowing for fine-grained control over account operations. Storage accounts are particularly useful for scenarios requiring joint fund management, escrow services, or segregated fund storage with specific access controls.

Token Accounts

Token accounts function as identifiers for different transferrable currencies or assets within the Keeta ecosystem. These accounts are central to the network's ability to support various forms of value transfer and asset representation. Administrators and owners of token accounts possess several key capabilities:

1. Supply Management: They can modify the total supply of the token, allowing for the implementation of various economic models, including fixed supply, inflationary, or deflationary token systems.
2. Balance Adjustment: Token account administrators have the ability to directly modify an entity's balance of the token. This feature can be useful for implementing complex token distribution strategies, resolving disputes, or correcting errors.
3. Usage Permissions: Administrators can grant or revoke specific users' ability to use the token. This granular control over token usage enables the implementation of whitelisting or blacklisting mechanisms, enhancing the token's compliance with regulatory requirements or specific use case needs.

The flexibility offered by token accounts allows for the creation and management of a wide range of digital assets, from simple cryptocurrencies to complex financial instruments or representations of real-world assets on Keeta Network.

Fig. 21:

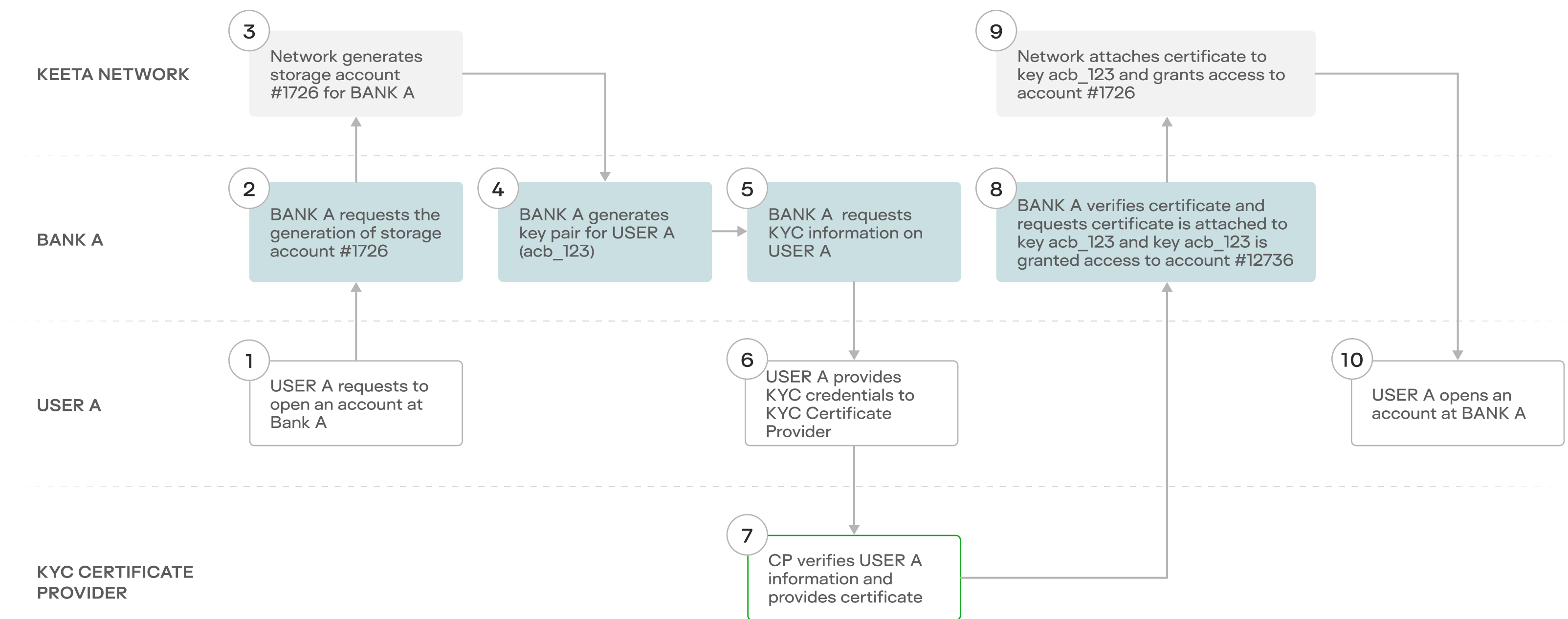
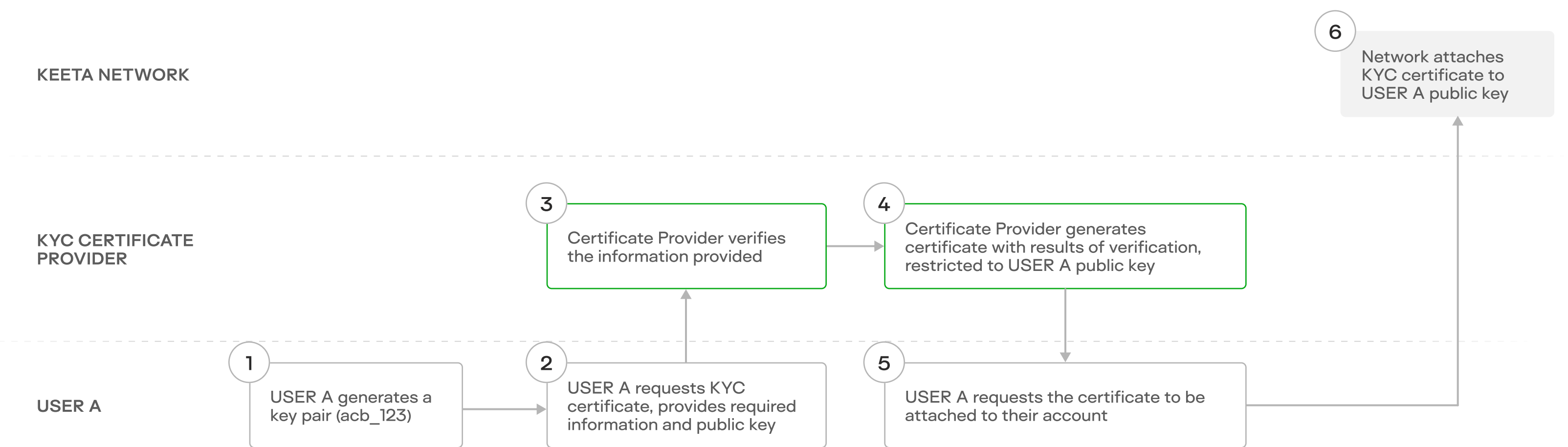


Fig. 22: Creating Key Pair & New Account (With Personal Key Pair)



Account Creation: With or Without Personal Key Pairs

Keeta network offers two approaches to account creation in the digital banking space, providing users with flexibility and choice in how they manage their financial identities. The system accommodates two distinct methods for establishing new accounts, each catering to different user preferences and security needs.

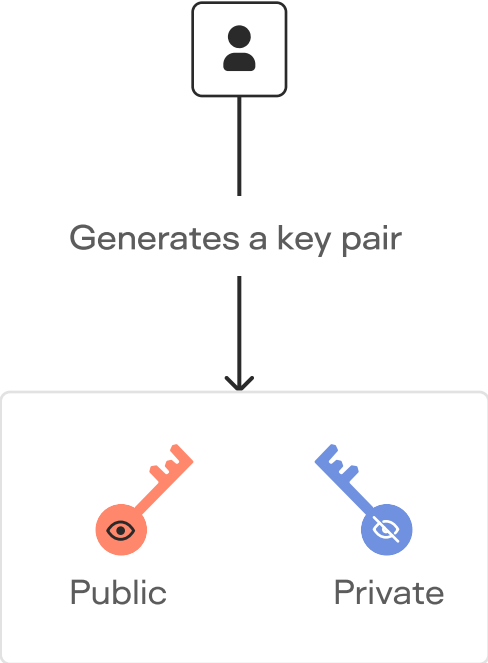
The first method allows users to create an account without managing their own personal key pair. In this scenario (figure XX), the bank and Keeta network handle the technical aspects of account security on behalf of the user. This approach mirrors traditional banking experiences, where the institution takes on the responsibility of securing the user's account. It's ideal for those who prefer a more hands-off approach to their digital financial security.

Alternatively, Keeta offers a method where users can create an account with their own personal key pair. This approach gives users direct control over their account security, allowing them to generate and manage their own cryptographic keys. This option appeals to tech-savvy individuals or those who prioritize personal control over their digital assets and identity.

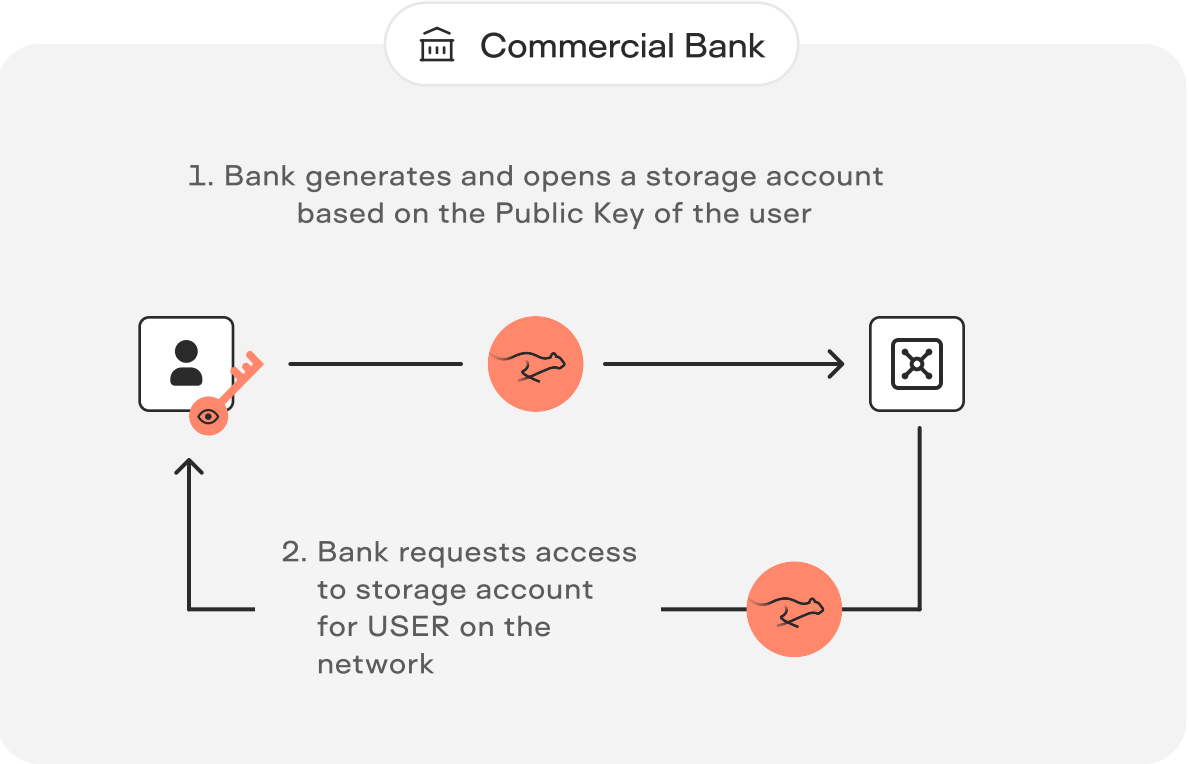
Both methods showcase Keeta's commitment to user choice and flexibility in digital banking, allowing individuals to select the level of involvement and responsibility they're comfortable with in managing their financial accounts.

Fig. 23: One Key Pair For Multiple Accounts Flow

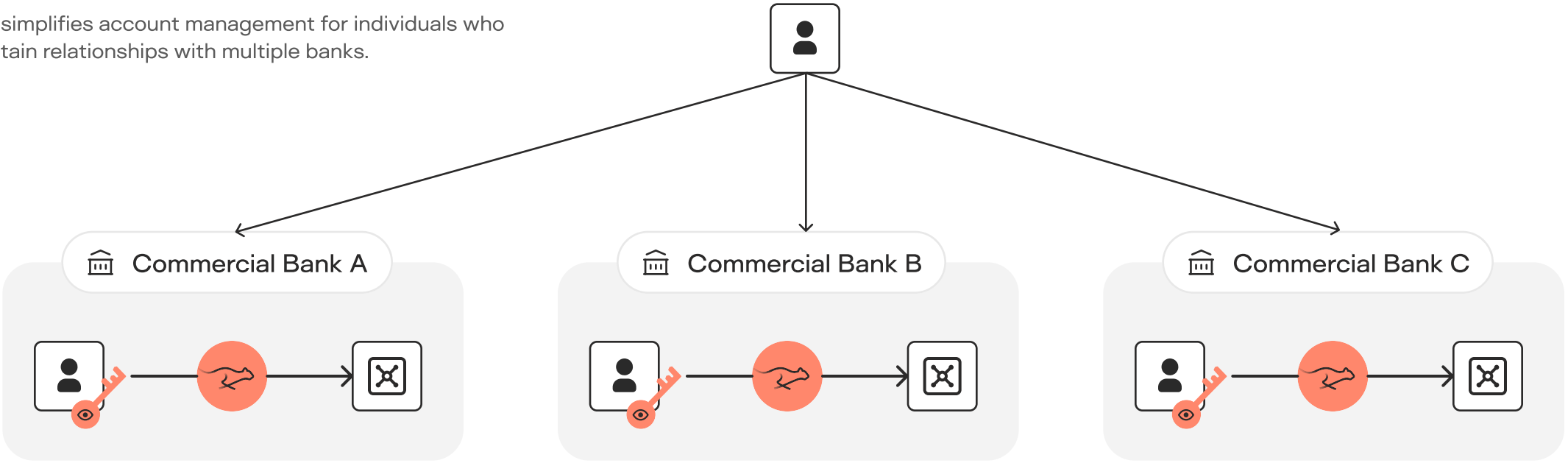
1 Generating a Key Pair
User generates a key pair via Keeta Network.



2 User shares the public key with a bank to open an account
The bank opens a Keeta Network storage account using the user's public key.



3 User can open many accounts with different bank providers using the same key pair.
This simplifies account management for individuals who maintain relationships with multiple banks.



One Key Pair for Multiple Accounts

Keeta Network introduces an innovative approach to digital banking by allowing users to utilize a single key pair to open and manage multiple accounts across different banks. This process begins with the user generating a key pair via Keeta Network, consisting of both a public and private key. The public key serves as a secure identifier that can be shared with various financial institutions.

When a user wishes to open an account with a bank, they simply share their public key. The bank then uses this public key to generate and open a storage account on Keeta Network specifically for that user. This process can be repeated with multiple banks, all using the same public key. As a result, users can establish and access numerous accounts across various financial institutions without the need to generate and manage multiple sets of cryptographic keys.

This system offers significant advantages in terms of user convenience and security. It simplifies account management for individuals who maintain relationships with multiple banks, while still preserving the high level of security associated with cryptographic key pairs.

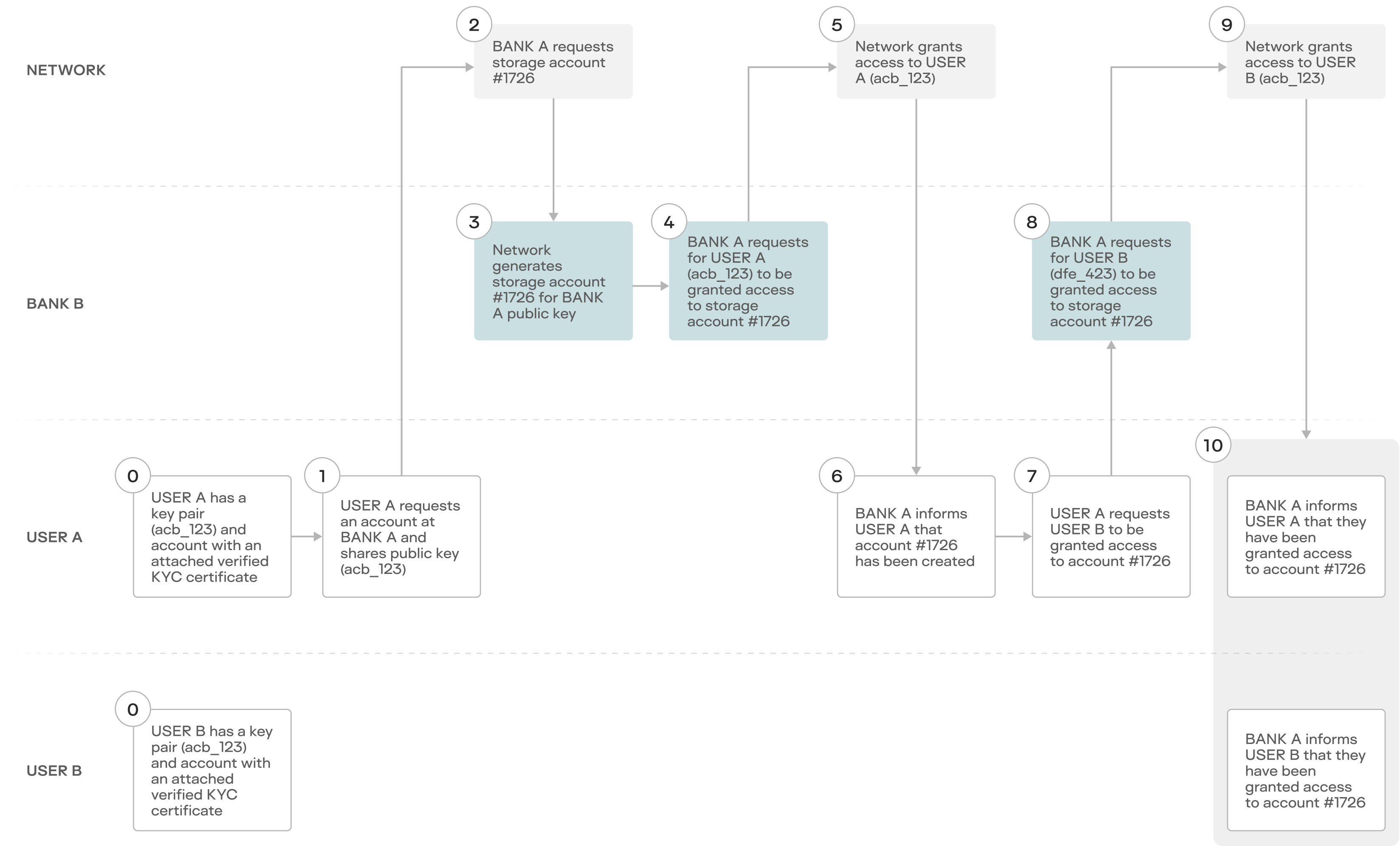
Create Joint Accounts on the Network

Keeta Network facilitates the creation of joint accounts through a multi-step process involving the bank, the network, and two users. This combines traditional banking practices with blockchain technology to establish secure, shared financial accounts.

To create a joint account, User A requests an account at Bank A and shares their public key. Bank A then interacts with Keeta Network to generate a storage account, which is linked to User A's public key. After User A's access is confirmed, they can invite User B to join the account. User B accepts the invitation and shares their public key with Bank A, allowing the bank to grant them access to the same storage account.

Keeta Network functions as an intermediary, creating the necessary account structures and managing access permissions based on the bank's requests. Both users can access and manage the joint account using their key pairs.

Fig. 24: Create Joint Accounts On The Network



Transferring Ownership of Account

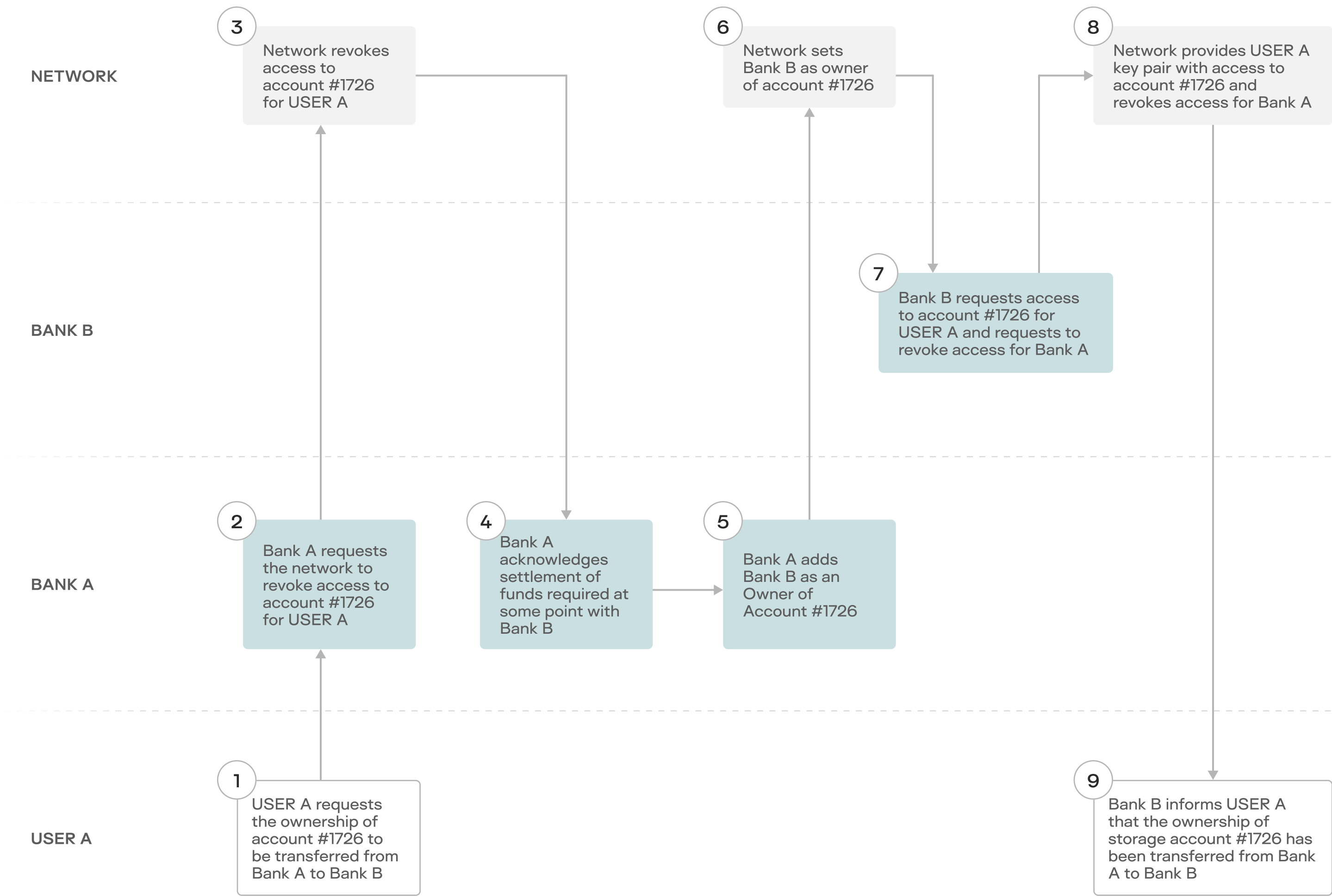
The diagram illustrates the process of transferring account ownership between banks on Keeta Network. This process involves five key steps:

1. Initiation: User A requests the transfer of account #1726 ownership from Bank A to Bank B.
2. Acceptance: Bank A + Bank B accepts the transfer of ownership request.
3. Network Update: Keeta Network processes the change, removing Bank A's association with account #1726 and adding Bank B.
4. User Confirmation: The banks inform User A that the ownership of account #1726 has been transferred to Bank B.

This enables inter-bank account transfers while maintaining the account and a clear record of ownership changes. It requires coordination between the user, both banks, and the network to ensure all parties are informed and the transfer is executed correctly. The network updates and maintains the account ownership information, acting as the authoritative source for these changes.

The ability to transfer account ownership between banks provides flexibility for users who may need to change their banking relationships.

Fig. 25: Transferring Ownership Of Account



With Keeta, switching banks is as easy as switching phone carriers.



Certificates on Keeta Network

Certificates on the network can be attached to accounts to serve as digital credentials that validate the identity, qualifications, and capabilities of participants within the system. These certificates are fundamental to establishing trust and enabling secure interactions between various parties on the network.

Scope and Flexibility

At their core, Keeta certificates are structured pieces of information that can represent a wide range of attributes. These may include Know Your Customer (KYC) verifications, business licenses, regulatory compliance certifications, and other important qualifications.

The flexibility of the certificate system allows for the representation of virtually any relevant attribute that may be required for financial or business operations.

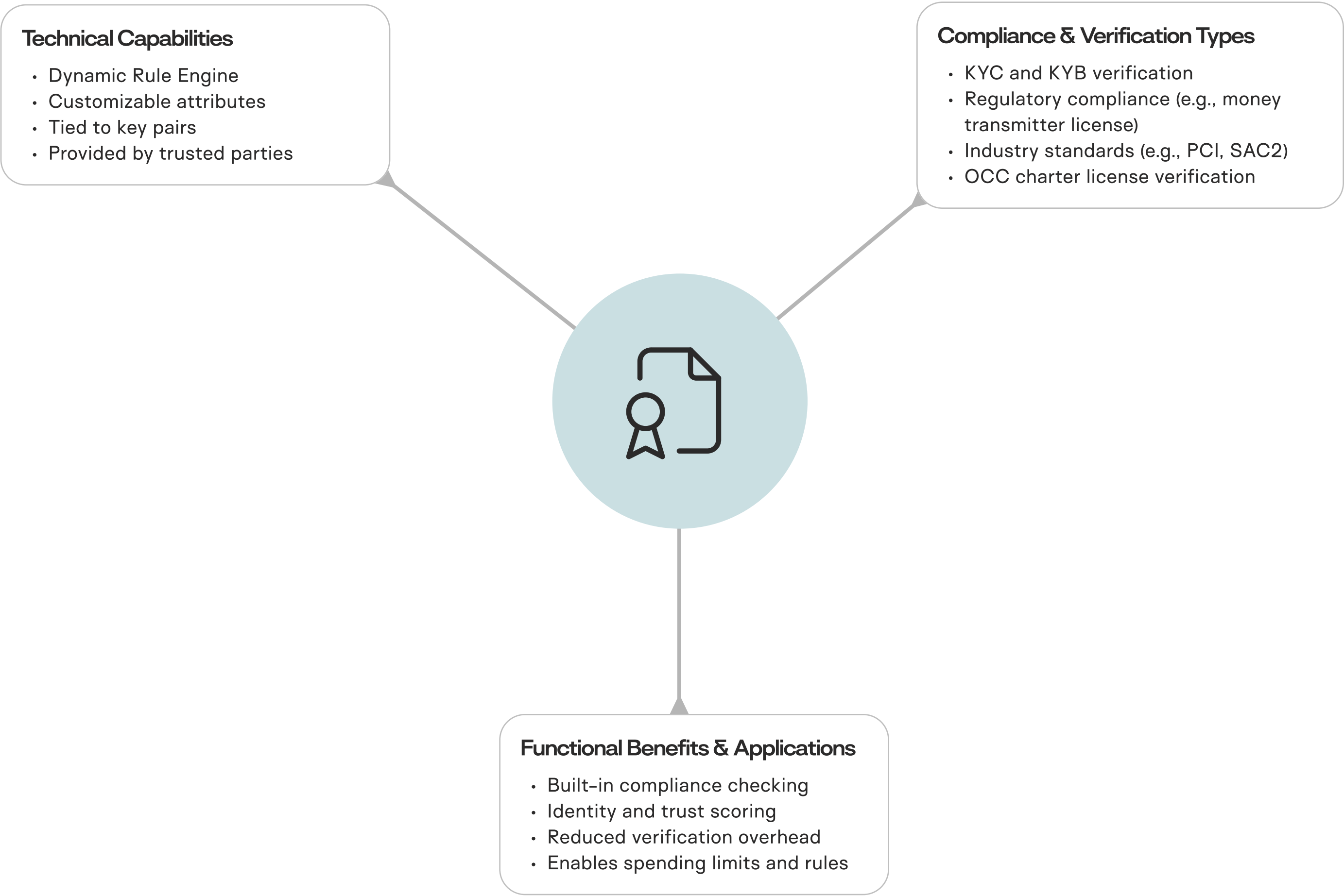
Dynamic Nature

One of the key features of certificates on Keeta Network is their dynamic nature. Unlike traditional static credentials, these certificates can be updated and modified over time through a Dynamic Rule Engine. This adaptability ensures that the information remains current and relevant, reflecting any changes in a participant's status or qualifications.

Role in Compliance and Security

Certificates play a crucial role in the network's compliance and security framework. They not only validate the legitimacy of participants but also define their capabilities within the system.

For example, a certificate might specify transaction limits, access rights, or the types of operations a participant is authorized to perform. This certificate-based approach to identity and permissions management helps streamline processes, and reduce verification overhead.

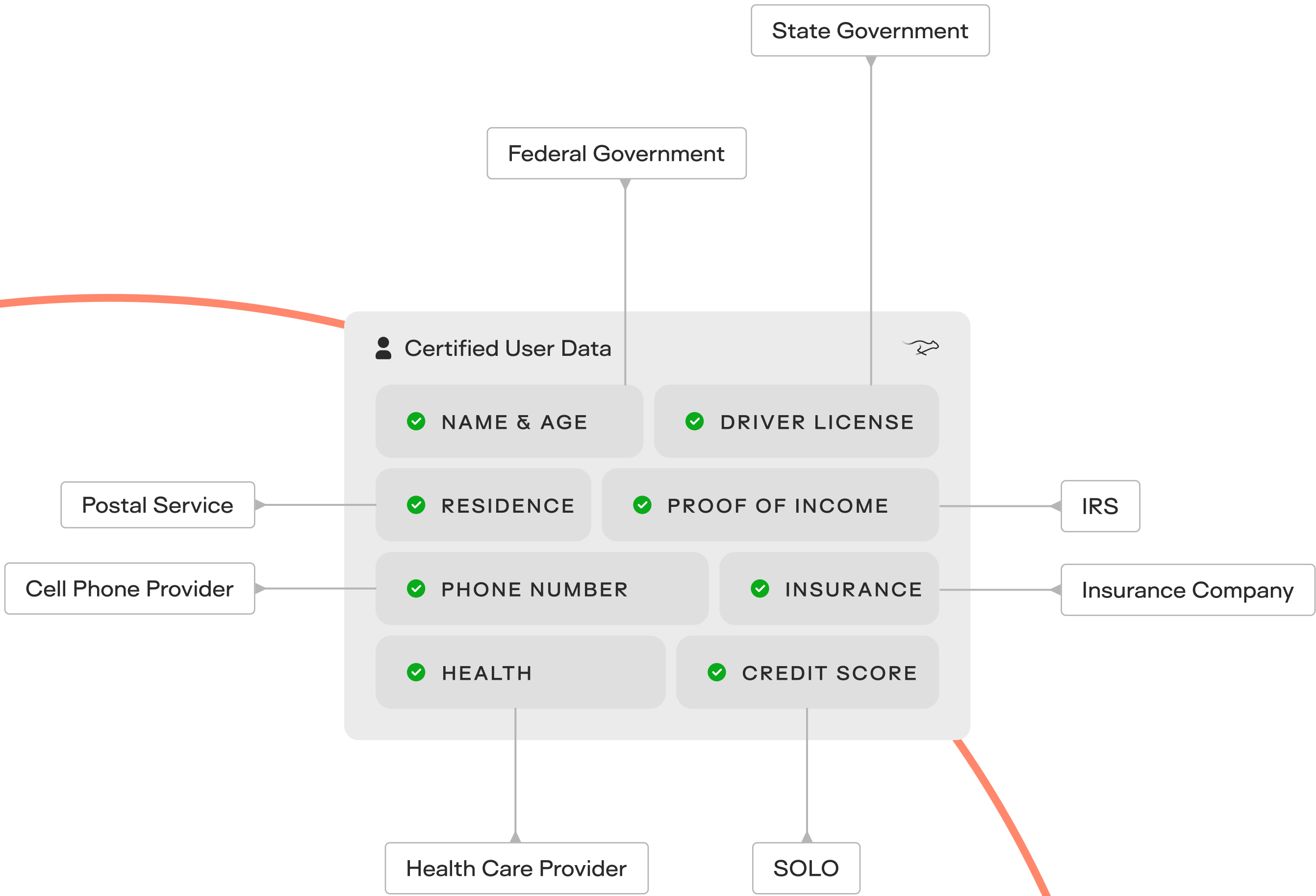


Building up a Profile

Any entity can become a Certificate Provider on the network, but trusted certificates from trusted entities are expected to be more widely accepted. These entities issue and manage digital certificates, serving as validators of identity and attributes for network participants. Each Certificate Provider is responsible for verifying information, issuing certificates tied to users' public keys, and managing the lifecycle of these certificates.

The certificates issued by these various Certificate Providers collectively form a comprehensive digital profile for each user on Keeta network. A user might have their identity verified by a government agency, their financial credentials certified by a bank, their professional qualifications validated by an industry association, and their educational background confirmed by a university. This creates a rich, multi-faceted overview of the user's verified attributes, all linked to their unique public key on the network.

Such a system allows for efficient and secure sharing of verified information across different services and applications within the Keeta ecosystem, reducing repetitive verification processes and enhancing user privacy by allowing selective disclosure of relevant certificates as needed for specific interactions or transactions.



*Image for illustrative purposes only

Digital Certificates in Fraud Prevention

Across Industries

Digital certificates on blockchain networks can significantly improve fraud prevention across various industries.

Financial Sector Applications

In the financial sector, certificates can be utilized to verify a user's identity, credit history, and financial status. When an individual applies for a loan or opens a new account, financial institutions can instantly check these certificates. This real-time verification process helps detect attempts to use stolen or fake identities. The immutable nature of blockchain-based certificates also means that any unauthorized alterations to financial history or credit scores would be immediately apparent, thus maintaining the integrity of financial transactions and credit assessments.

E-commerce and Digital Services

The e-commerce sector can leverage digital certificates to improve transaction security and prevent account takeover fraud. Certificates verifying a user's identity, address, and payment information can be cross-referenced during transactions. This multi-factor verification makes it more challenging for fraudsters to use stolen credit card information or hijacked accounts. Additionally, digital service providers can use these certificates to implement more robust age verification systems or to confirm user eligibility for specific services.

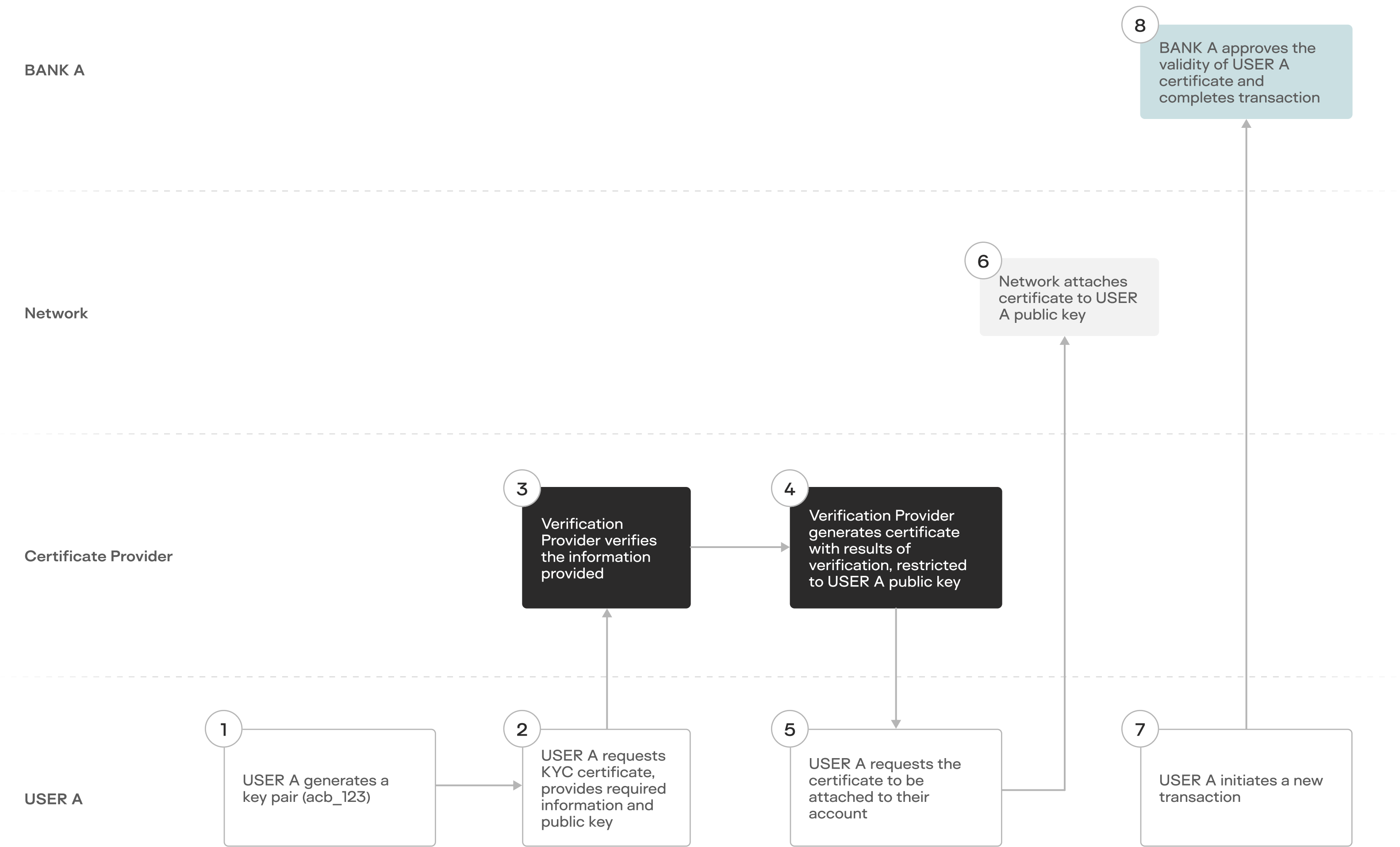
Integration of AI in Certificate-Based Systems

Artificial Intelligence could significantly enhance the effectiveness of certificate-based fraud prevention systems. AI algorithms can analyze patterns in certificate usage and flag unusual activities that might indicate fraud attempts.

For example, AI can detect anomalies in how certificates are being used over time, potentially identifying stolen identities or compromised accounts.

Furthermore, AI can assist in risk assessment by providing dynamic risk scores based on the analysis of certificate data and user behavior. This allows businesses to make more informed decisions about transactions or interactions with individuals. The combination of verifiable certificates and AI-driven analysis creates a system that can adapt to evolving fraud tactics, offering a more effective and flexible approach to fraud prevention across industries.

Fig. 26: Certificate Creation On Keeta Network



Certificate Creation on Keeta Network

Keeta’s certificate creation process ensures secure and verifiable digital identities. USER A initiates by generating a key pair and requesting a KYC certificate from the Certificate Provider, providing the necessary information and their public key.

The Certificate Provider then verifies this information and generates a certificate restricted to USER A's public key. USER A requests the attachment of this certificate to their account, which the Network promptly executes. With this verified credential, USER A can now initiate transactions. BANK A, or any other relevant party, can approve the validity of USER A's certificate to complete transactions.

This streamlined process creates a single, verifiable identity with associated certificates usable across multiple actions within the Keeta ecosystem. The user's key pair, securely stored on their device, links directly to their identity, enabling instant verification without repetitive KYC processes for each new service interaction. This enhances both security and efficiency, allowing for dynamic updates to the user's digital identity as their status or permissions evolve.

One Identity, Multiple Businesses

On Keeta Network, users can leverage their key pair to streamline the process of opening accounts across various businesses. The user's key pair, securely stored on their personal device, acts as a digital identity anchor. This key pair is linked to a set of certificates on the network that validate the user's identity, credentials, and other relevant attributes. These certificates can include verifications such as Know Your Customer (KYC), creditworthiness, or specific qualifications.

When a user wants to open a new account with a business on Keeta Network, they simply need to provide their public key. The business will then pull the certificates attached to the public key. This allows the business to instantly verify the user's identity and credentials without the need for a lengthy application process.

This system creates a "digital passport" of sorts, allowing users to carry their verified credentials with them across the Keeta ecosystem. It not only simplifies the account opening process but also improves security and reduces fraud, as businesses can rely on pre-verified information.

Moreover, the dynamic nature of these certificates means that if a user's status changes (for example, they move to a new address or obtain a new qualification), this information can be updated in their certificates, ensuring that businesses always have access to the most current and accurate user data when creating new accounts or providing services.

Fig. 27: Creating & Sharing Your Identity

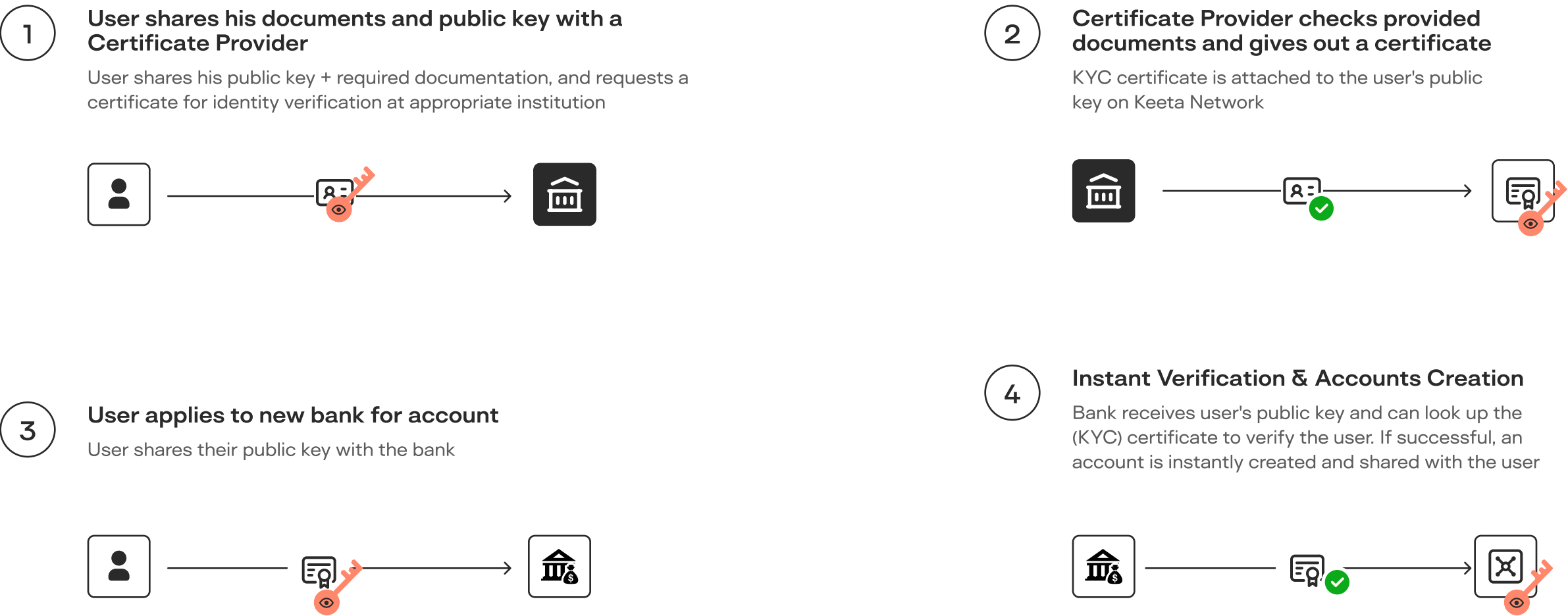


Fig. 28: With an approved certificate, users can effortlessly engage with new banks, institutions, and government entities, streamlining account creation and service access across multiple sectors.

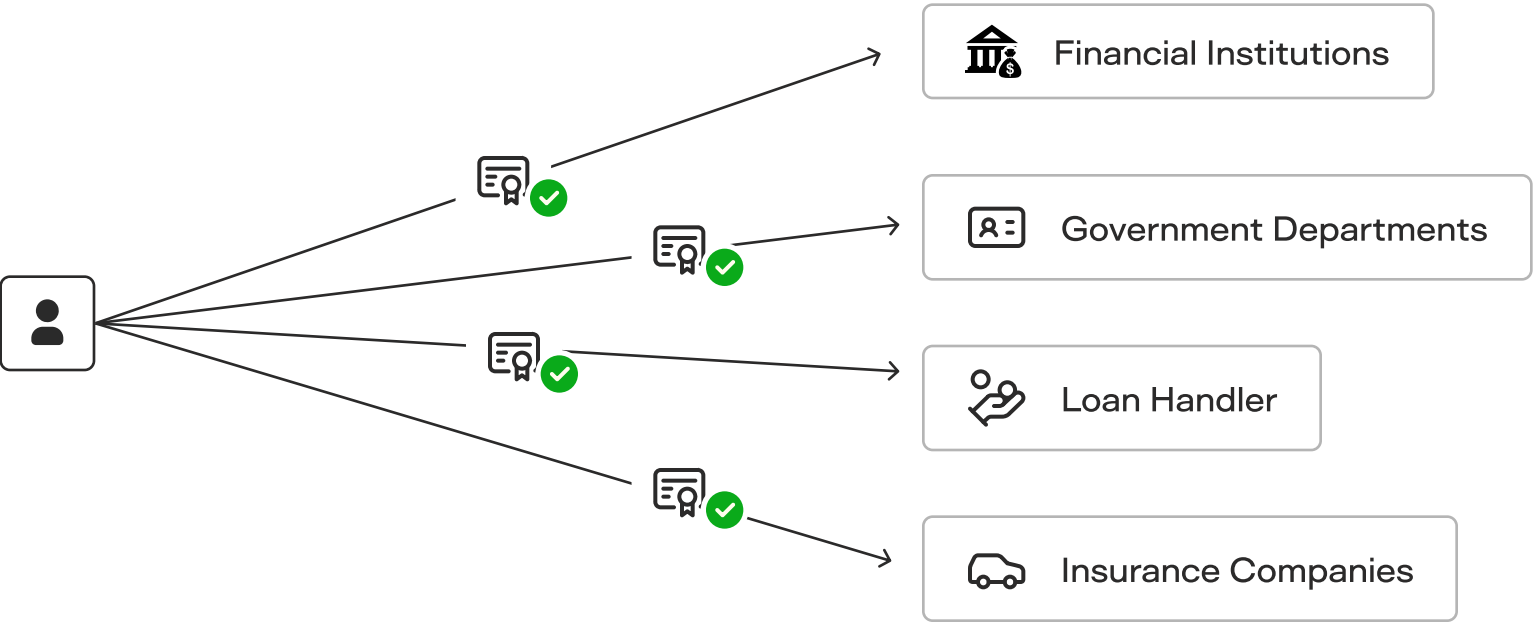
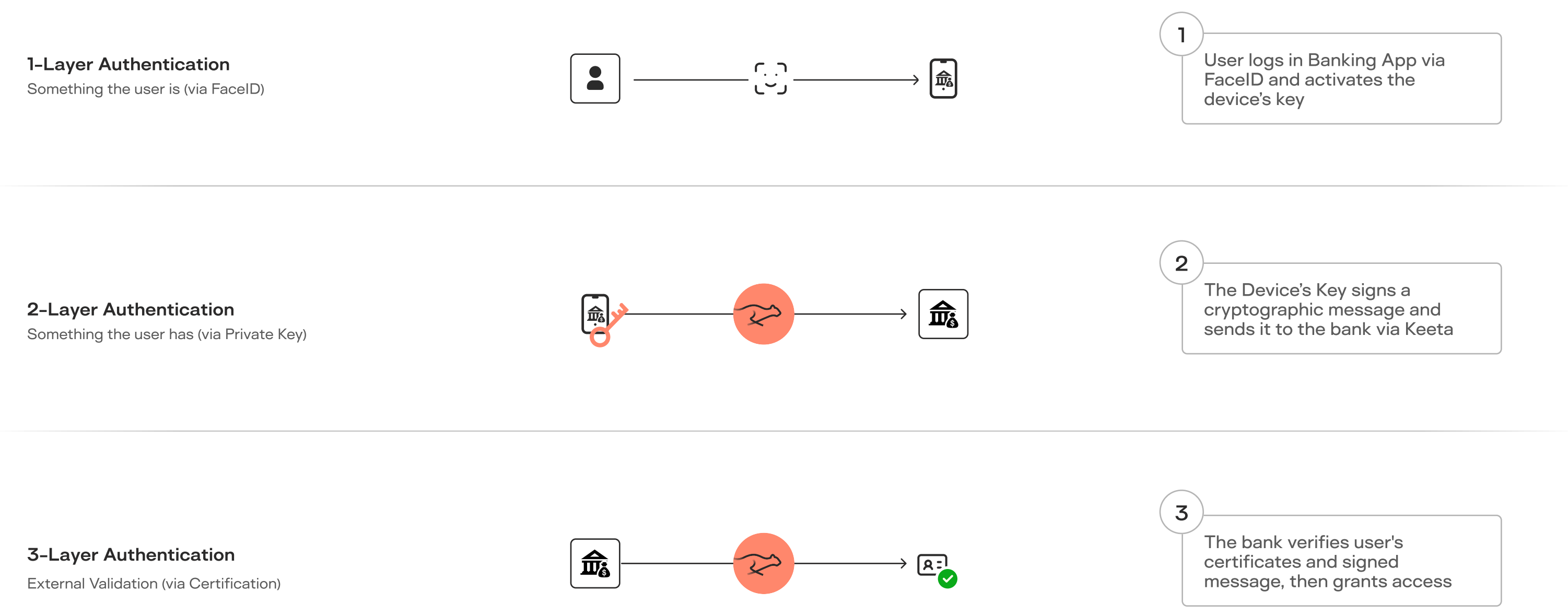


Fig. 29: Three-Layered Authentication



Enhanced Authentication with Keeta

The authentication process unfolds in two seamless steps. First, Face ID verifies the user's facial features, confirming they are the device owner. Then, the system activates the user's private key stored securely on the device, which signs a cryptographic message sent to the bank app to complete the login.

This dual-layer authentication enhances security by combining something the user is (biometric data) with something the user has (cryptographic key). It ensures that both the authorized person and the device are verified, providing higher security for financial transactions and protecting against unauthorized access.

Moreover, this method integrates with Keeta Network's certificate system, allowing additional verifications and permissions to be checked during login. The system can enforce specific security policies, verify user roles, and ensure compliance with regulatory requirements—all in real-time during authentication.

This authentication process also enables more secure and efficient interactions across various services within the Keeta ecosystem. The same authenticated key can access multiple services without compromising security, streamlining the user experience while maintaining robust protection.

HIGH-LEVEL OVERVIEW

Keeta's Global Financial Activity Graph

Keeta is pioneering an approach to financial data by creating a comprehensive graph of global financial activity. This interconnected network captures and analyzes transactions, fund flows, and economic interactions across borders and institutions. By leveraging blockchain technology and secure data-sharing protocols, Keeta aggregates information from banks, financial institutions, and payment systems worldwide, creating an unprecedented view of the global financial landscape.

This global financial activity graph enables financial institutions to conduct more sophisticated risk assessments and detect fraudulent activities with greater accuracy. By analyzing patterns and connections within the graph, banks/FI can identify unusual transactions, trace fund origins, and predict potential financial crimes more effectively. This bird's-eye view of financial movements allows for real-time monitoring and proactive risk management, significantly enhancing the security and integrity of the global financial system.

Access to this interconnected financial data empowers institutions of all sizes to make more informed decisions. From optimizing investment strategies to improving regulatory compliance, the insights derived from Keeta's global financial graph provide a competitive edge. Moreover, this comprehensive view of financial activity can aid in economic research, policy-making, and fostering greater transparency in global finance. As the graph grows and evolves, it has the potential to revolutionize how we understand and interact with the global financial ecosystem.

Fig. 31: Examples Of An Interconnected Financial World Via Keeta



*Image for illustrative purposes only

Tokenization

30 - 34



Tokenization with Keeta

Tokenization is a cornerstone feature of Keeta Network, offering a flexible and efficient way to represent and transfer value. In the Keeta ecosystem, tokens are not smart contract-based assets but are native to the network itself. This approach enables a wide range of applications, from representing currencies to creating digital versions of real-world assets.

Native Token Implementation

Keeta tokens represent a native asset creation system within Keeta Network. Unlike traditional blockchain platforms such as Ethereum, where tokens are typically created and managed through smart contracts, Keeta tokens exist as first-class citizens on the network. This fundamental difference in token architecture offers several advantages in terms of efficiency and flexibility.

1. Streamlined Operations and Cost Efficiency

The native implementation of Keeta Tokens eliminates the need for smart contract interactions for basic token operations. This design choice significantly reduces transaction complexity and associated costs. In contrast to Ethereum's gas fee model, where users must pay the network's native currency (ETH) for every token transaction, Keeta's approach allows for more streamlined and cost-effective token operations.

2. Versatility and Ease of Use

Keeta's token system is designed for versatility and ease of use. Any approved network participant can create tokens, representing a wide range of assets from currencies to real-world items. The system supports both fungible and non-fungible tokens, catering to diverse tokenization needs. Additionally, Keeta incorporates a dynamic rules engine that allows token creators to attach specific conditions or behaviors to their tokens, with these rules being automatically enforced by the network.

Network-Level Management and Scalability

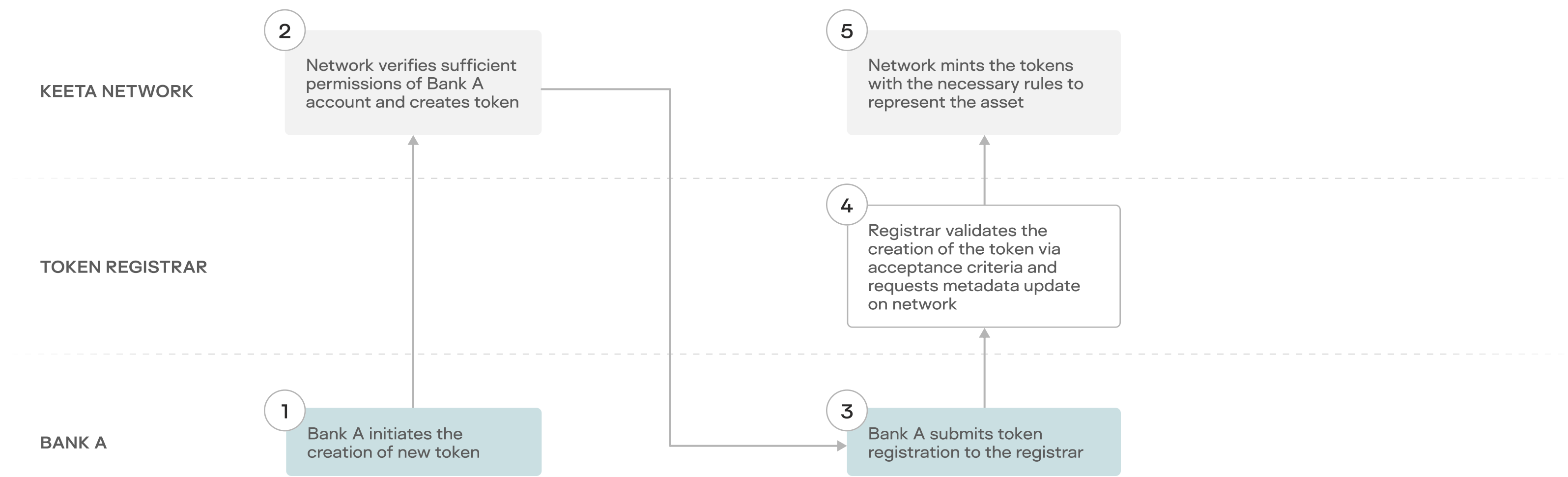
Keeta's approach to token management occurs at the network level rather than through individual smart contracts. This design enables more efficient scaling of token operations and allows for network-wide updates or improvements to token functionality.

It also facilitates easier integration of tokens into various services and applications within the Keeta ecosystem, as they all interact with tokens in a standardized way defined by the network protocol.

Fig. 32: Comparing Keeta’s Tokenization Features Vs. Ethereum

Keeta	Ethereum
✔ Native token creation	✘ Smart contract-based creation
✔ Direct token transactions	✘ Smart contract interactions for transactions
✔ No gas fees for token operations	✘ Gas fees required for all operations
✔ Built-in rules engine	✘ Custom smart contract logic required

Fig. 33: Token Creation Process



Token Creation Process on Keeta

The token creation process on Keeta Network begins with the token creator defining the key attributes of their token. These attributes typically include the token's name, symbol, total supply, and any specific rules or restrictions that will govern the token's behavior on the network. This initial step allows creators to customize their tokens according to their specific needs or use cases.

Once the token attributes are defined, the creator initiates a token creation on Keeta Network. The network then verifies that the creator has sufficient network permissions to create the token. If the creation is deemed valid, the network generates a unique identifier for the new token and records its creation on the blockchain. Following this, the network assigns the initial supply to the creator's account.

After the token is created and recorded on the blockchain, it becomes part of the Keeta ecosystem. The token creator can then distribute, transfer, or manage the tokens according to their intended purpose. The network's infrastructure allows these newly created tokens to interact with other components of the ecosystem, such as exchanges or wallets, subject to the rules and restrictions set during the creation process.

It's worth noting that Keeta Network incorporates certain measures to maintain the integrity of the token creation process. These include safeguards to prevent the creation of fraudulent or duplicate tokens, as well as compliance checks to ensure that tokens meet any relevant regulatory requirements. Additionally, the network's rules engine allows for the implementation of specific token behaviors, such as automatic burning, minting, or transfer restrictions. These features can be customized during the creation process or modified later, depending on the network's protocols and the specific requirements of the token.

Fig. 34: Default Token Attributes

1 Default Token Attributes
TOKEN NAME
SYMBOL
SUPPLY
DIVISIBILITY
TRANSFERABILITY

Built-in Rules Engine

Keeta's blockchain includes a rules engine that allows creators to attach specific rules to tokens when they are issued. These rules define how the token can be used, transferred, or managed within the network. For example, a rule might restrict transfers to certain users, set expiration dates, or require approval before transactions can occur.

Automatic Enforcement of Token Rules

The network automatically enforces these attached rules. Whenever a transaction involving the token is initiated, the network checks the token's rules to ensure the transaction complies with them. If the transaction doesn't meet the specified conditions, the network will block it. This automatic enforcement ensures that all token activities adhere to the intended guidelines without the need for manual oversight.

Updating Token Rules After Issuance

One of the key features of Keeta's rules engine is the ability to update the rules even after the token has been created and distributed. Token issuers can modify the rules to adapt to new regulations, changing business needs, or other factors. Once the rules are updated, the network applies the new conditions to all future transactions involving that token.

Fig. 35: Geographical Restrictions Example

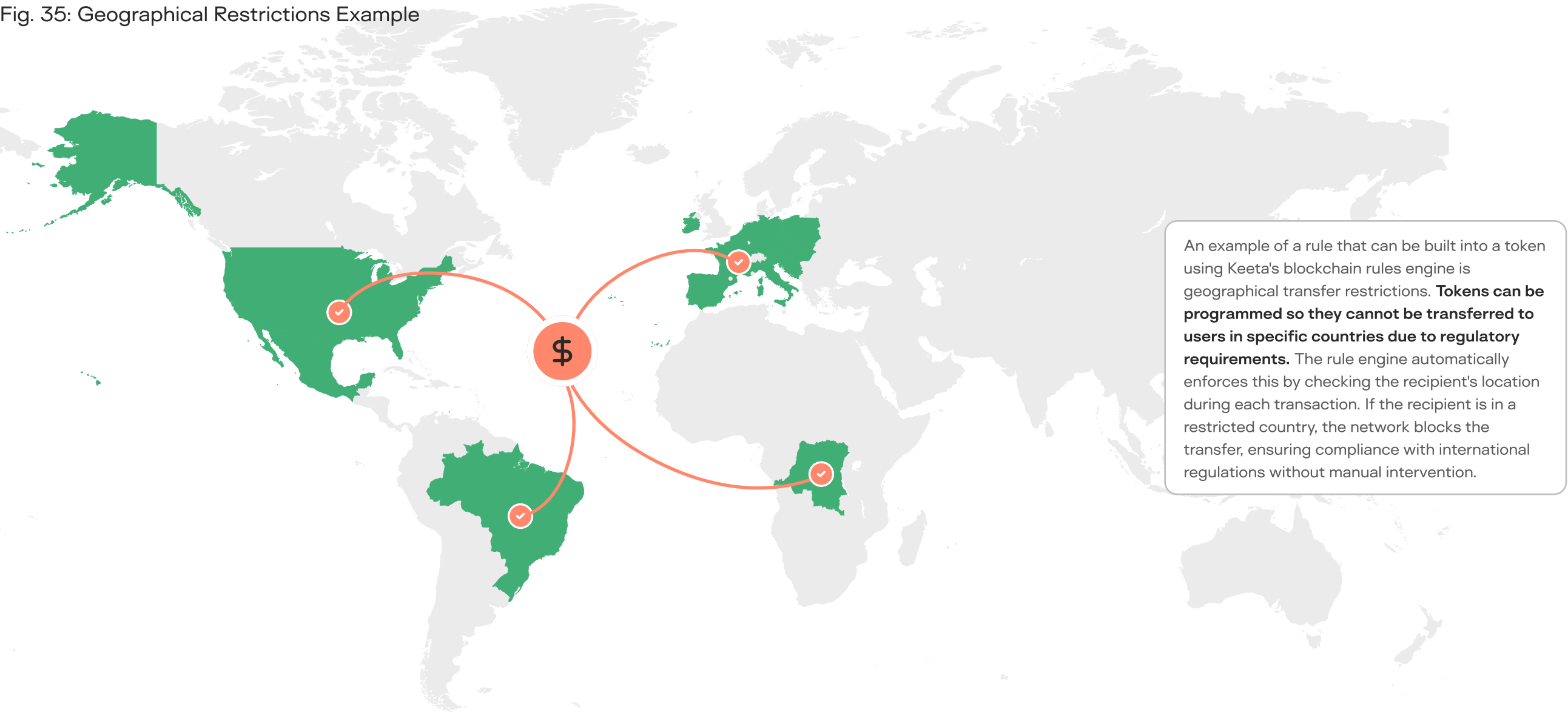


Fig. 36: Transaction Approval Requirements Example

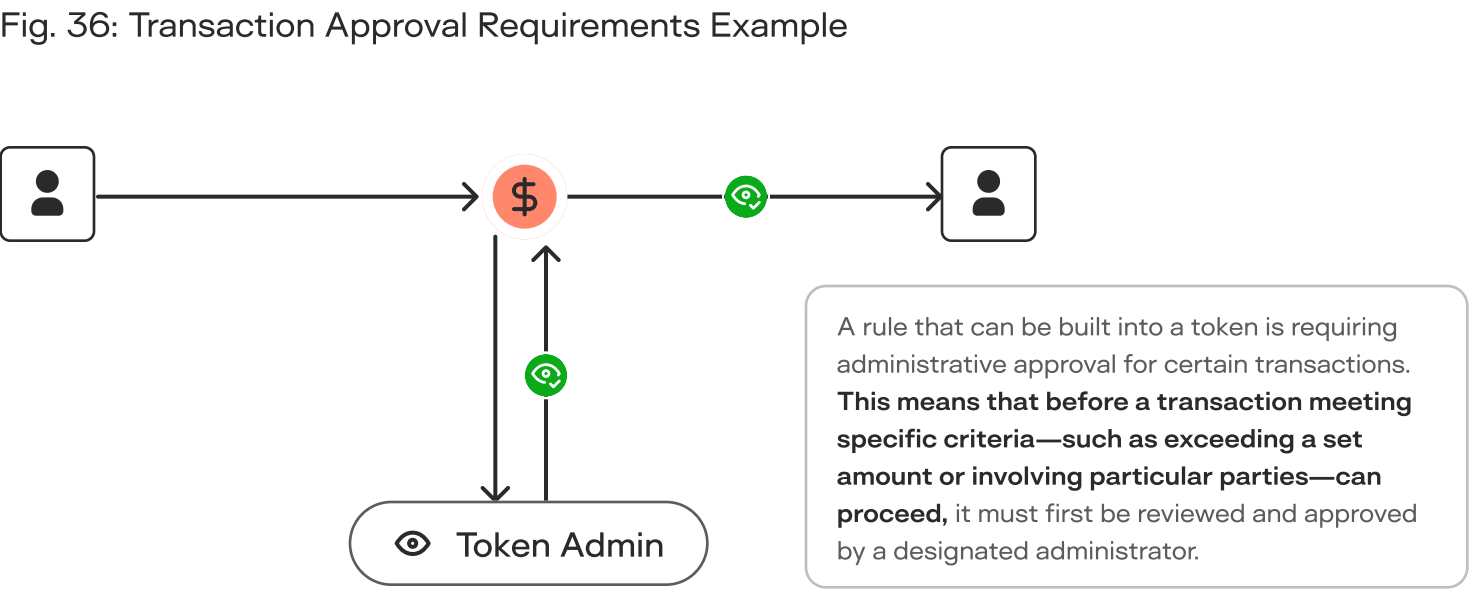
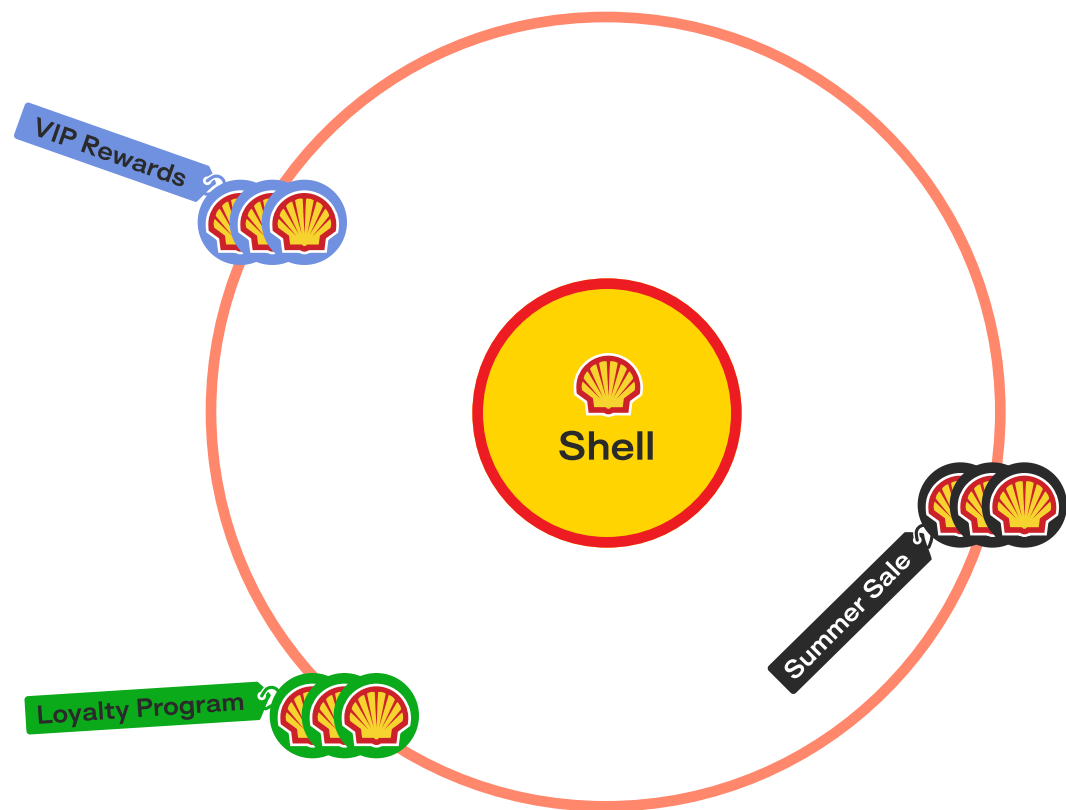


Fig. 37: Time-Locked Tokens Example

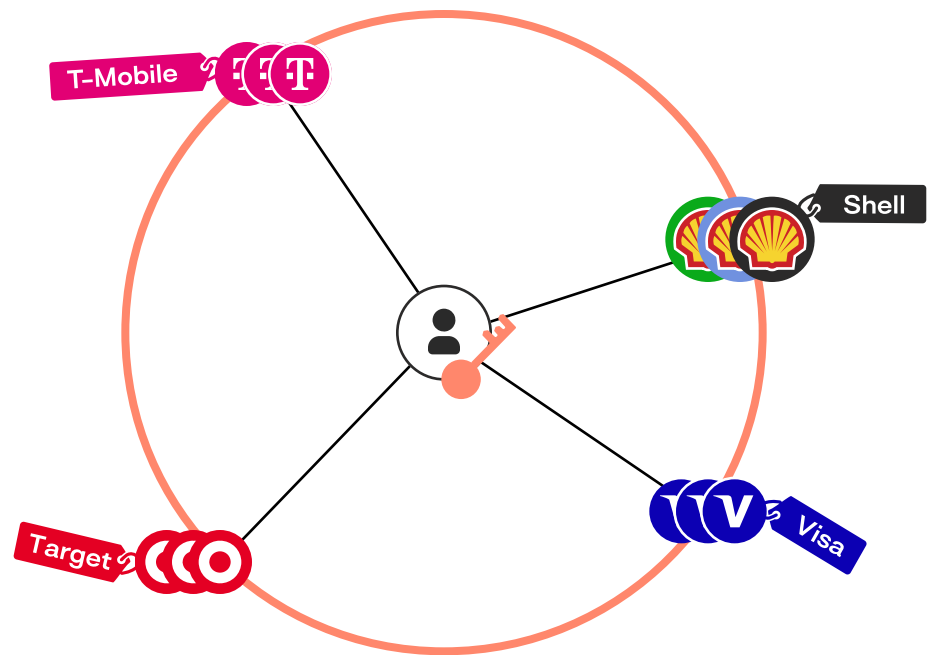


Fig. 38: Companies Can Effortlessly Create And Deploy Multiple Tailored Reward Tokens



*Images for illustrative purposes only

Fig. 39: Users Can Hold Multiple Reward Tokens With Just One Key Pair Account



Tokenization in Reward Programs

Companies leveraging Keeta Network benefit from operating their reward tokens on the same ledger as their regular transactions. This unified infrastructure simplifies management, allowing businesses to streamline operations, monitor both financial and reward transactions in one place, and reduce operational overhead. By maintaining rewards on the same network, companies ensure consistency, transparency, and ease of auditing across all activities.

Moreover, Keeta enables companies to quickly create and deploy targeted reward tokens for specific marketing campaigns or customer segments. Whether launching short-term promotions or long-term loyalty programs, the ability to spin up custom tokens allows businesses to tailor their rewards precisely to current needs and customer behaviors.

For users, Keeta Network offers convenience through a single key pair that provides access to all reward programs on the platform. This seamless integration simplifies token management, enabling users to easily track, redeem, and transfer their rewards across various programs with minimal effort.

Finally, there is potential for companies to explore token interoperability. In future scenarios, reward tokens could be exchanged between businesses, creating a broader ecosystem. Users would benefit from an interconnected web of reward programs, further enhancing the utility and value of these digital assets.



Currency Tokenization on Keeta

Currency tokenization on Keeta Network involves creating digital representations of fiat currencies as blockchain tokens, similar to how other assets are tokenized. This process allows for the creation of digital versions of existing currencies, such as the US Dollar, Euro, or Yen, which can be seamlessly transferred and managed within the Keeta ecosystem.

Token Issuance and Administration

The level of tokenization can vary, with commercial banks or central banks acting as token issuers and administrators, depending on the implementation and regulatory environment.

1. Commercial Banks as Issuers

When a commercial bank acts as the token issuer, it can create tokens representing the deposits held by its customers. These tokens can be used for various financial transactions within Keeta Network, allowing for faster and more efficient money movement between accounts, even across different banks.

2. Central Banks as Issuers

In cases where a central bank is an issuer, the tokens represent a form of Central Bank Digital Currency (CBDC), providing a digital alternative to physical cash that can be used for both retail and wholesale transactions.

Benefits of Currency Tokenization:

Currency tokenization offers significant advantages to the financial system. Primarily, it enables fast settlement of transactions, which can substantially reduce the time and costs associated with traditional money transfers, especially for cross-border payments. This speed and efficiency greatly improve liquidity management for businesses and financial institutions. Also, tokenized currencies increase the transparency and traceability of financial flows, which aids in regulatory compliance and can reduce the risk of fraud.

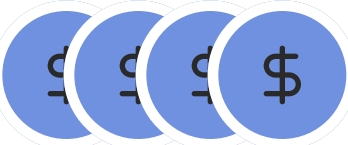
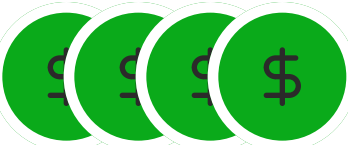
Another key benefit is the capability for programmable money, where conditions and rules can be embedded into the tokens themselves. This feature enables the automated execution of complex financial agreements, potentially revolutionizing areas such as escrow services and conditional payments. Furthermore, currency tokenization can enhance financial inclusion by providing easier access to banking services for underbanked populations, as well as facilitating micro-transactions that may be impractical with traditional banking systems.

For central banks, issuing tokenized currencies can provide better control over monetary policy and improve the efficiency of implementing financial regulations. It allows for more direct transmission of monetary policy changes and can provide real-time data on currency circulation and velocity. This enhanced visibility and control can be particularly valuable during times of economic stress or when implementing targeted economic interventions.

1

Commercial Banks as Issuers

When commercial banks act as issuers of tokenized currencies, they create digital tokens representing customer deposits. These tokens can be used for faster and more efficient transactions within Keeta Network, allowing seamless movement of funds between accounts, even across different banks. Tokenized currencies streamline payment processes, reduce transfer costs, and enhance liquidity management, benefiting both the banks and their customers.



2

Central Banks as Issuers

When central banks issue tokenized currencies, they create digital representations of Central Bank Digital Currencies (CBDCs). These tokens provide a secure, digital alternative to physical cash, usable for both retail and wholesale transactions. By issuing tokenized currencies, central banks can improve monetary policy control, enhance transparency, and provide real-time data on currency circulation and velocity, which is crucial for managing economic stability.

Commercial Banks as Issuers

Commercial banks have the opportunity to create digital currencies by tokenizing their funds on Keeta Network. This innovative approach allows banks to reap the benefits of blockchain technology before the widespread adoption of central bank digital currencies (CBDCs). By tokenizing their funds, commercial banks can improve efficiency, reduce costs, and expand their service offerings.

Direct Communication with Participants

One of the primary advantages of fund tokenization for commercial banks is the ability to transact with other banks on the network. When two banks on Keeta Network engage in a transfer, the transaction is settled with speed and security. This direct communication eliminates many of the hurdles traditionally involved in inter-bank transfers, streamlining the process and reducing potential points of failure.

Network Utility and Participation

The value of Keeta Network grows exponentially as more banks join and utilize tokenized currencies. This network effect creates a powerful incentive for widespread adoption. As participation increases, banks gain the ability to send funds to a growing number of institutions both domestically and internationally. This expanded reach translates directly to improved services for end users, who benefit from faster, more efficient transfers across a broader geographic area.

Cost Reduction

Perhaps one of the most compelling reasons for commercial banks to adopt tokenized currencies is the significant cost savings. Communication and transactions between banks on Keeta Network are substantially cheaper than traditional payment systems, whether for domestic or international transfers. By reducing operational costs, banks can offer more competitive services to their customers while improving their own bottom line.

Future-Proofing Banking Operations

By embracing tokenized currencies, commercial banks position themselves at the forefront of financial innovation. This approach allows them to develop expertise in blockchain-based financial systems, potentially easing the transition to CBDCs when they are introduced. It enables banks to offer cutting-edge services to their clients, maintaining their relevance in an increasingly digital financial landscape.



Banks can create custom tokens for exclusive trading with specific partners. These tokens enable tailored agreements between institutions.

Fig. 40: Flow Of Funds In Current Financial Environment (ACH)

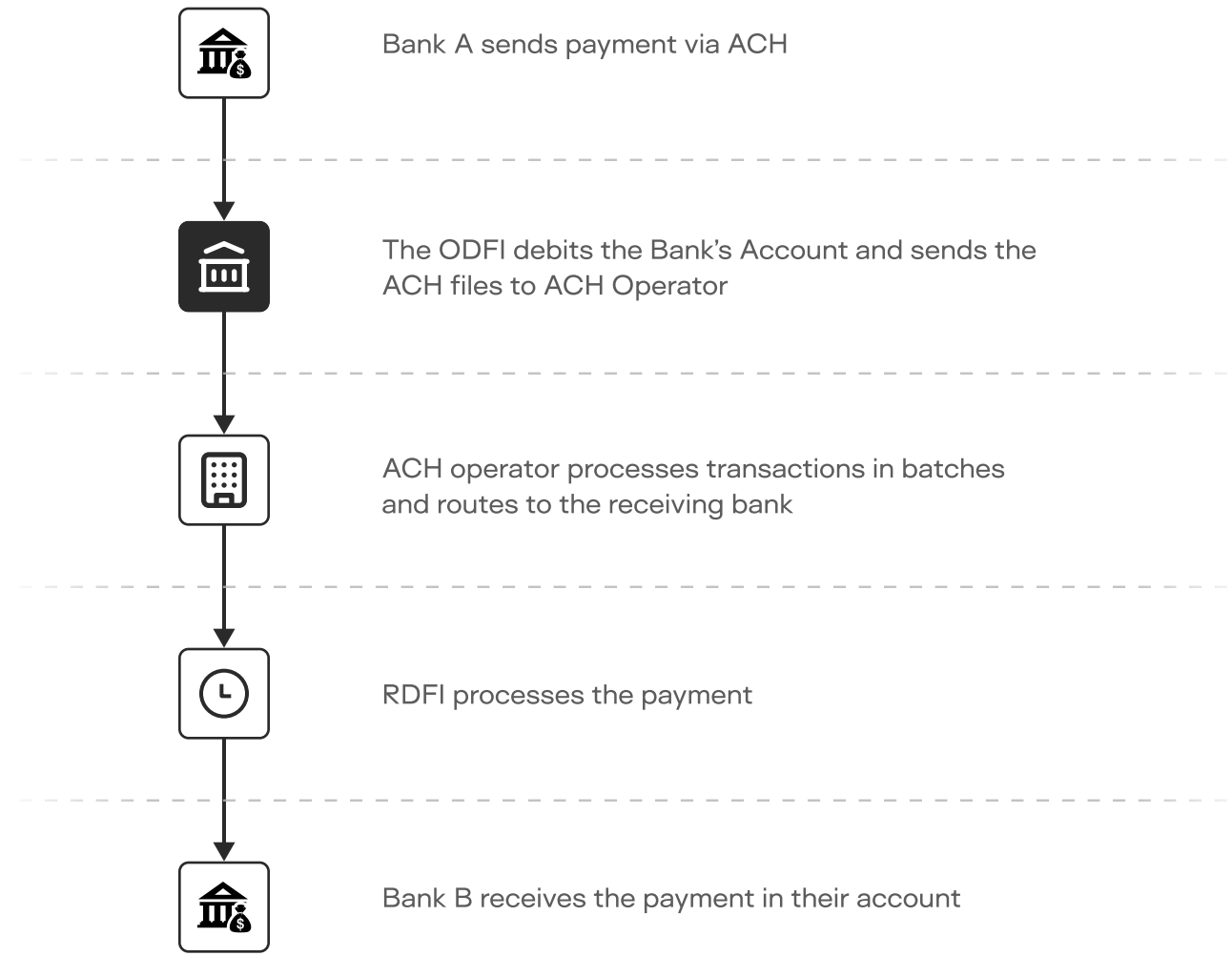
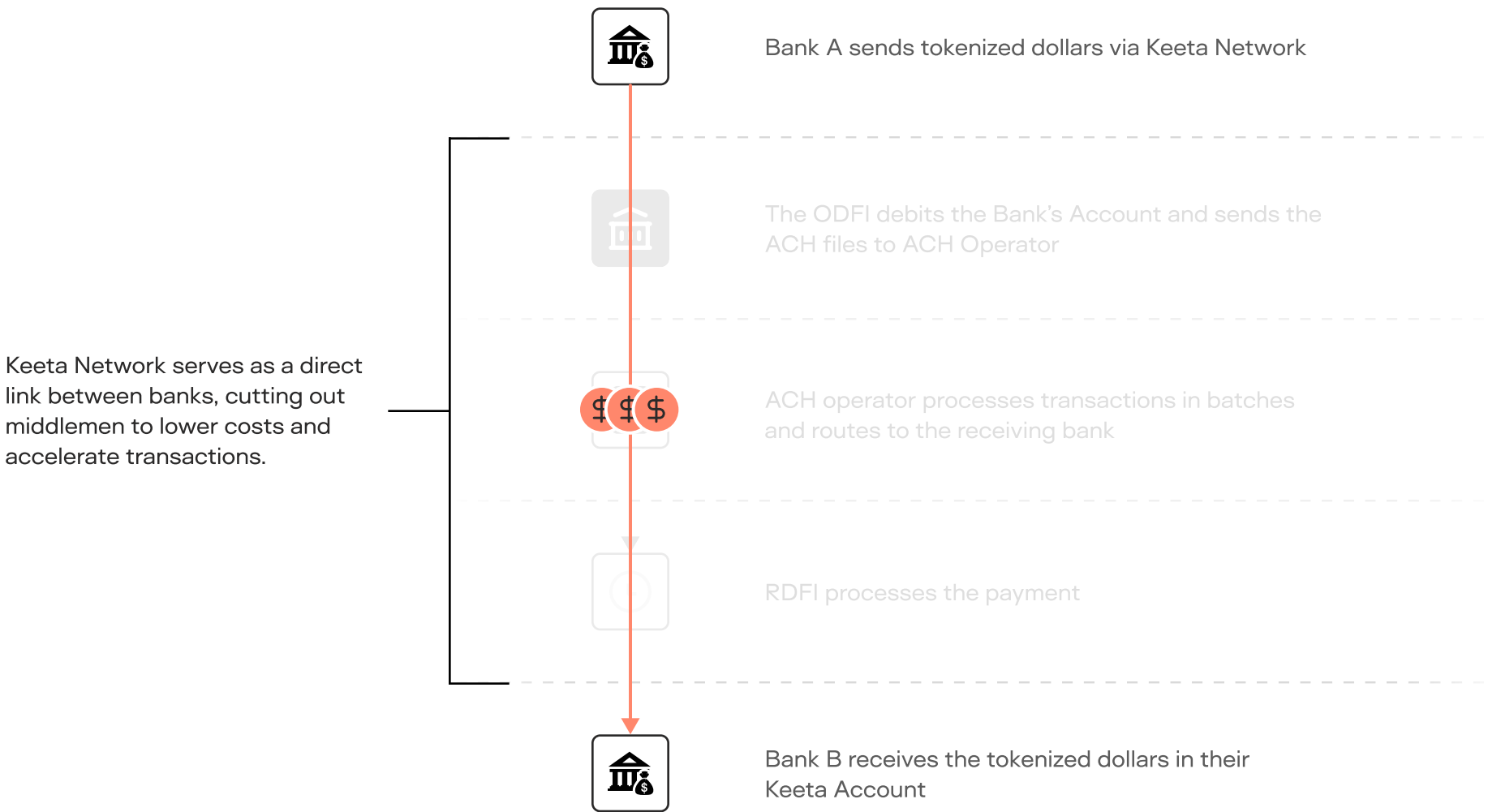


Fig. 41: Flow Of Funds In Tokenized Keeta Environment



Central Banks as Issuers

On Keeta Network, central banks can issue tokenized versions of their currencies, mirroring the process used for other asset tokenization. This approach allows for the creation of Central Bank Digital Currencies (CBDCs).

Improved Domestic Money Movement

One of the advantages of central bank-issued digital currencies is the improvement of domestic financial transactions. Point-of-sale (POS) payments can be settled almost instantaneously, significantly reducing processing times and costs. Additionally, peer-to-peer (P2P) money transfers can occur directly between bank accounts, eliminating the need for intermediary applications like Venmo or Cash App. This direct transfer capability not only speeds up transactions but also potentially reduces fees associated with third-party services.

Reducing Illicit Activities

The immutable nature of blockchain technology provides transparency in financial transactions. Every transaction on Keeta Network is recorded and can be tracked closely. This feature enables central banks and regulatory authorities to more effectively prevent tax evasion and combat money laundering. The ability to trace the flow of funds in real time makes it significantly more challenging for bad actors to engage in illicit financial activities.

Cost Reduction and Efficiency

CBDCs offer substantial cost savings compared to traditional physical cash. The expenses associated with printing, storing, moving, and tracking physical currency are greatly reduced or eliminated. Digital currencies can be issued, distributed, and managed at a fraction of the cost of physical cash, leading to increased efficiency in the overall monetary system.

Audibility

One of the most significant advantages of CBDCs on Keeta Network is the level of audibility they provide. Every transaction is recorded on the network's distributed ledger, creating an immutable and easily retrievable record. This feature not only improves transparency but also simplifies auditing processes for financial institutions and regulatory bodies. The ability to review any transaction at any time strengthens the integrity of the financial system and helps in quickly identifying and addressing any irregularities.

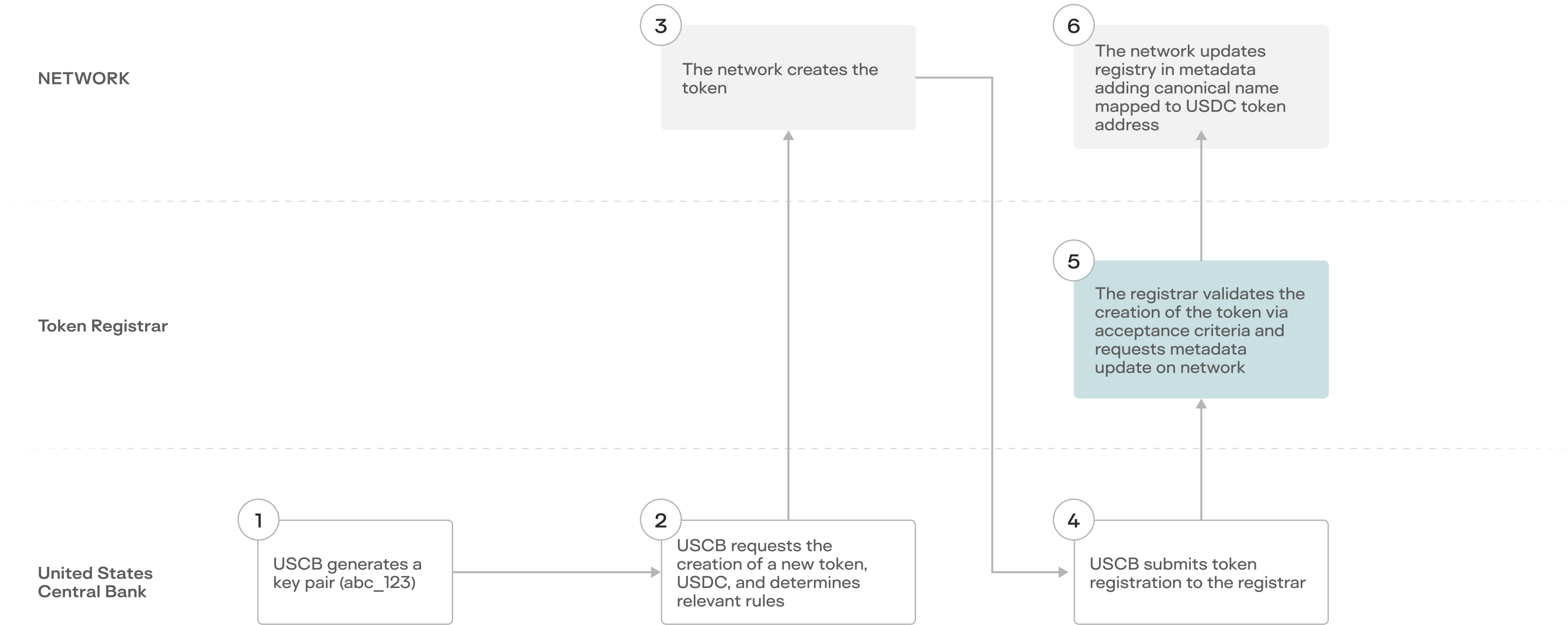


Central Bank Digital Currency Creation Process

Keeta Network facilitates the creation of digital currencies through a structured process involving three key entities: the Central Bank, the Token Registrar, and the Network itself. This process ensures the secure and compliant introduction of new digital tokens, such as the United States Digital Dollar (USDD), into the financial system.

The process of creating USDD begins with the United States Central Bank generating a unique key pair, which serves as the foundation for the new digital currency. The Central Bank then requests the creation of a new token, specifying its rules and parameters. This request is sent to the Token Registrar, which validates the creation criteria and ensures all regulatory requirements are met. Once validated, the Registrar requests a metadata update on the network. The Network then creates the token and updates its registry, adding a canonical name mapped to the token's address.

Fig. 43: Creating A CBDC Involves A Few Steps



Digital currency creation combines technological innovation with regulatory oversight to ensure secure and compliant financial instruments.

Zero-Liquidity Model



Zero-Liquidity Model

In traditional banking systems, banks settle transactions with each other frequently, which requires significant liquidity reserves. This practice ties up capital and incurs costs. Keeta’s Zero-Liquidity Model proposes a different method.

Operational Mechanics

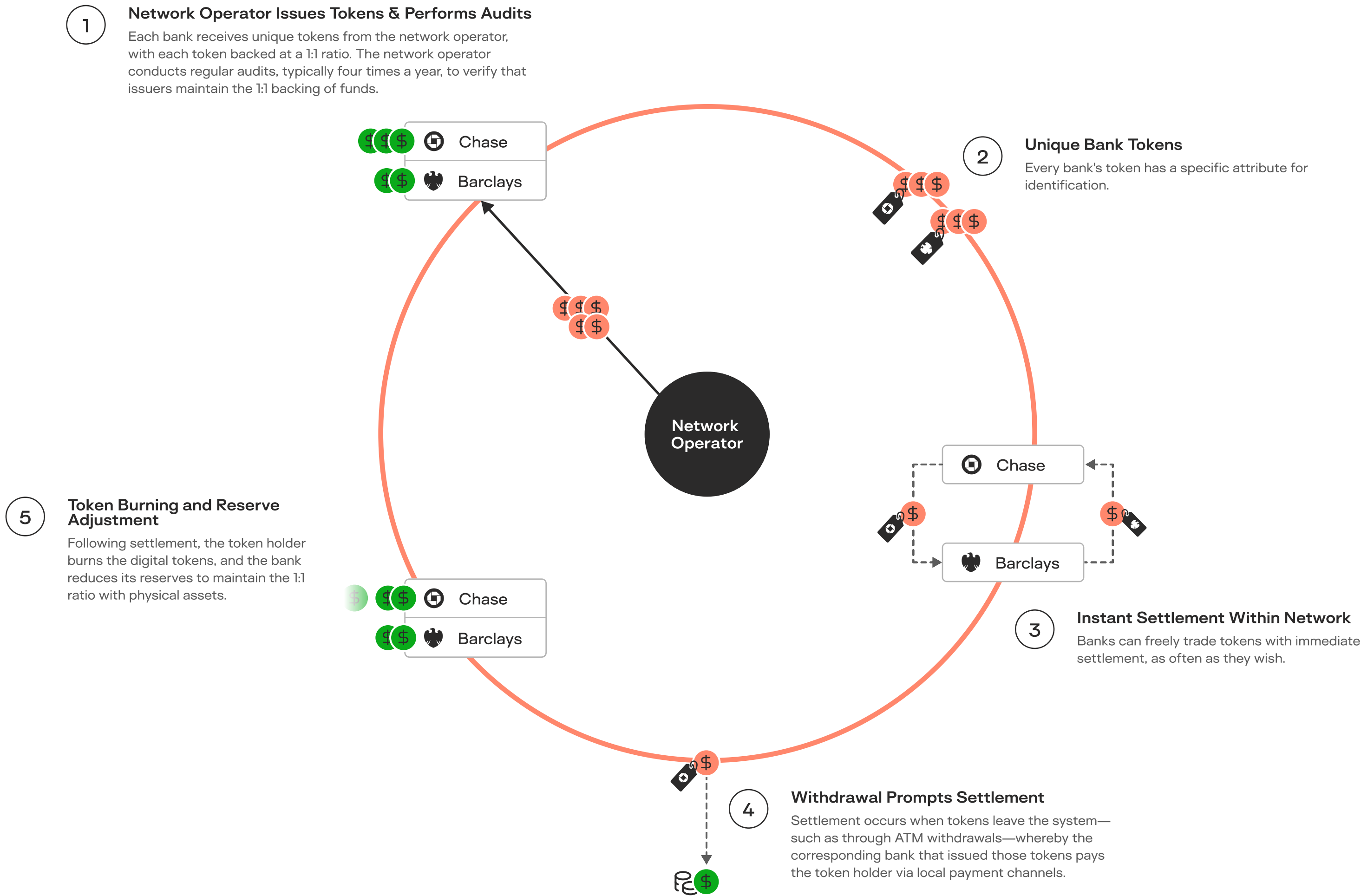
Under this model, banks can transfer tokenized currency to one another without immediate physical settlement. For example, Bank A can send tokens to Bank B, which can then forward them to Bank C and so on, all without settling each individual transaction. This chain of transfers can continue indefinitely within the network, with physical settlement only occurring when a bank decides to remove currency from the system.

Unique Identifiers and Tracking

The key to this system is the use of unique identifiers attached to each bank's minted currencies. These identifiers allow the network to track the origin and movement of funds, ensuring that when settlement is eventually required, it can be carried out accurately. The network host provides these identifiers to banks upon approval, maintaining a clear record of token ownership and transfer history.

Benefits and Efficiency

By deferring settlement and allowing multiple transfers without immediate reconciliation, banks can operate more efficiently within the network. The result is a reduction in the costs associated with maintaining high liquidity levels and frequent settlements.



Token Creation and Identification on Keeta Network

1 Network Operator Issues Tokens

The network operator issues unique tokens to each participating bank. When a bank joins the network, it undergoes a thorough verification process. Once approved, the network operator creates a set of digital tokens specifically for that institution.

Each token issued is backed on a 1:1 basis with real assets. This means that for every digital token in circulation, there is an equivalent amount of physical currency or assets held in reserve. To ensure this backing is maintained, the network operator also audits the bank's funds to verify the 1:1 ratio. This auditing process helps maintain the integrity of the system by confirming that the tokens have real-world value.

The issuance process incorporates advanced cryptographic techniques to ensure the security and authenticity of each token from the moment of creation. This includes the use of public-key cryptography and digital signatures, which verify the legitimacy of the tokens and prevent unauthorized creation or manipulation.

2 Unique Bank Tokens

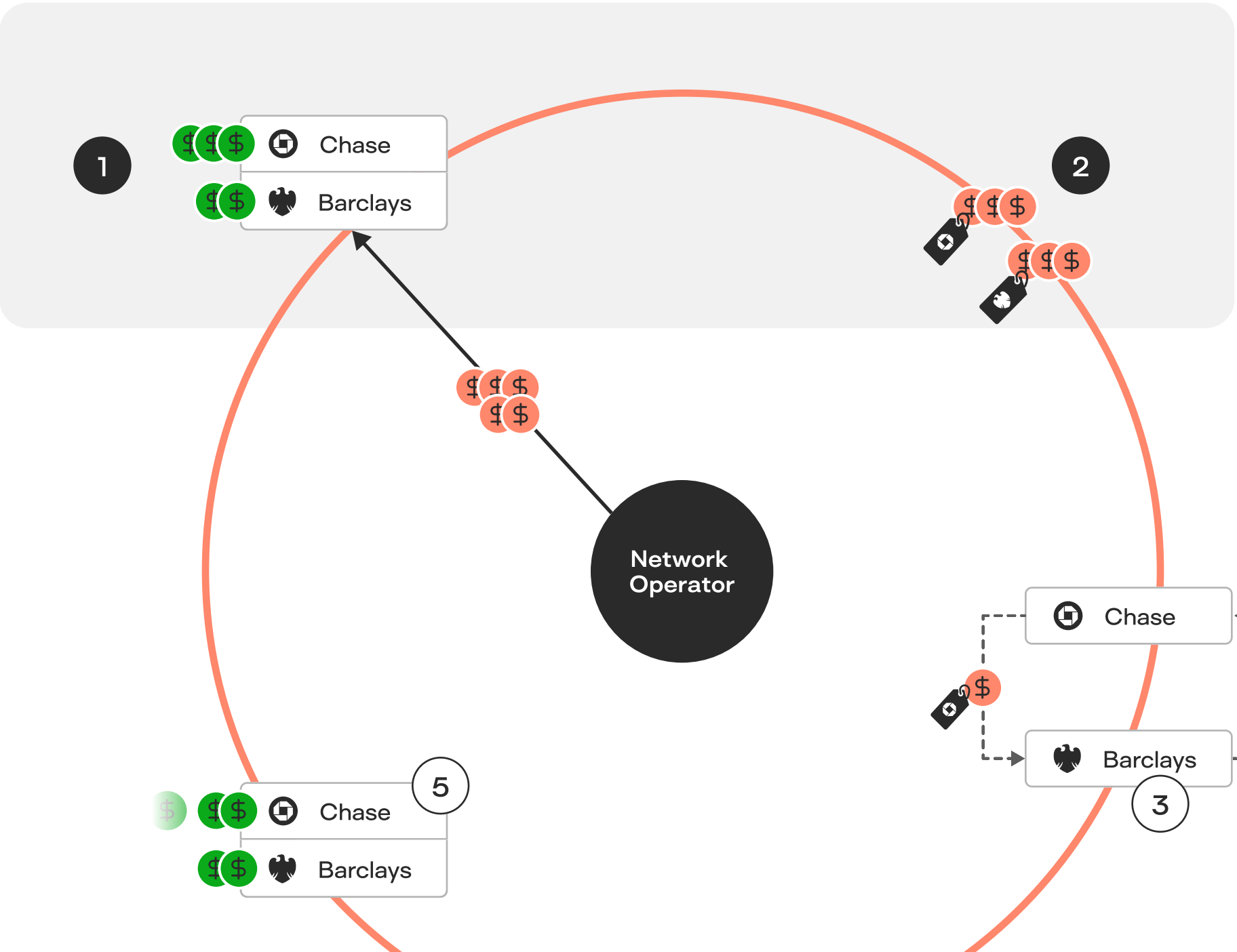
Following the issuance, each bank's token is imbued with specific attributes that serve as its digital fingerprint. These attributes are important for identification and tracking within the network. They may include:

- The bank's unique identifier
- Token issuance date
- Token denomination
- Other relevant metadata

The unique attributes allow the network to recognize the origin and ownership of tokens as they move between banks. This helps to maintain transparency and facilitates

accurate tracking of fund movements. It enables the system to monitor the flow of tokens across multiple transactions without losing sight of the original issuer.

The attributes assigned to each token are encrypted and can only be verified by authorized parties within the network. This ensures that the identification system remains secure and resistant to tampering or fraud.



Trading on the Network

With the issuance of unique tokens, Keeta Network facilitates near-instant settlements between participating institutions. Banks can freely trade their tokens quickly, marking an advancement over traditional interbank settlement systems.

3 Instant Settlement Within the Network

When banks exchange tokens on the network, the transaction is settled almost instantaneously. The unique identifiers and attributes assigned to each token in the previous steps play a crucial role, enabling the network to verify and transfer ownership immediately without the need for an intermediary clearing house or time-consuming validation processes.

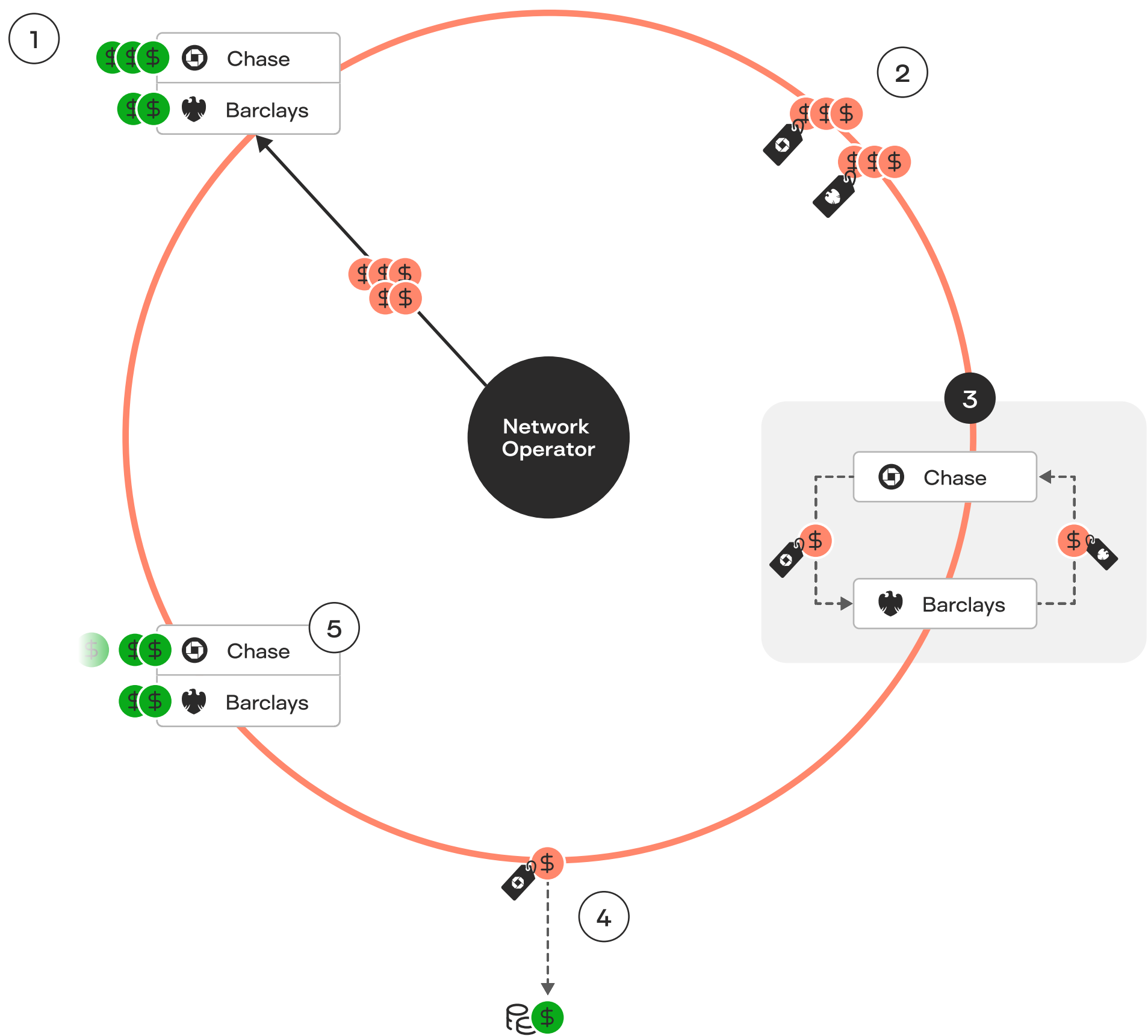
Keeta's near-instant settlement feature supports complex, multilayered transactions. Banks can engage in chains of trades, with each link in the chain settling instantly. For instance, Bank A can transfer tokens to Bank B, which can then immediately use those tokens to trade with Bank C, and so on. This capability creates a fluid, efficient ecosystem for interbank transactions.

An important feature of this system is that while settlements occur instantly within the network, they don't require immediate real-world fund movements. Banks can conduct multiple transactions on the network before any physical settlement is required. This separation between network and real-world settlements is central to the zero-liquidity model, allowing for more efficient use of capital. As more banks participate and trade on the network, the efficiency of the system increases.

The instant settlement feature, combined with the unique identification of tokens, allows for a high volume of transactions to be processed quickly and securely. This scalability is essential for handling the growing demands of global financial operations.

Security and Transparency

Despite the speed of settlements, Keeta Network maintains high levels of security and transparency. Each transaction is recorded and can be traced back to the original token issuance using the unique attributes. This makes settlements fully auditable and compliant with regulatory requirements.



Physical Settlement and Bank Reserve Verification

4 Withdrawal Prompts Settlement

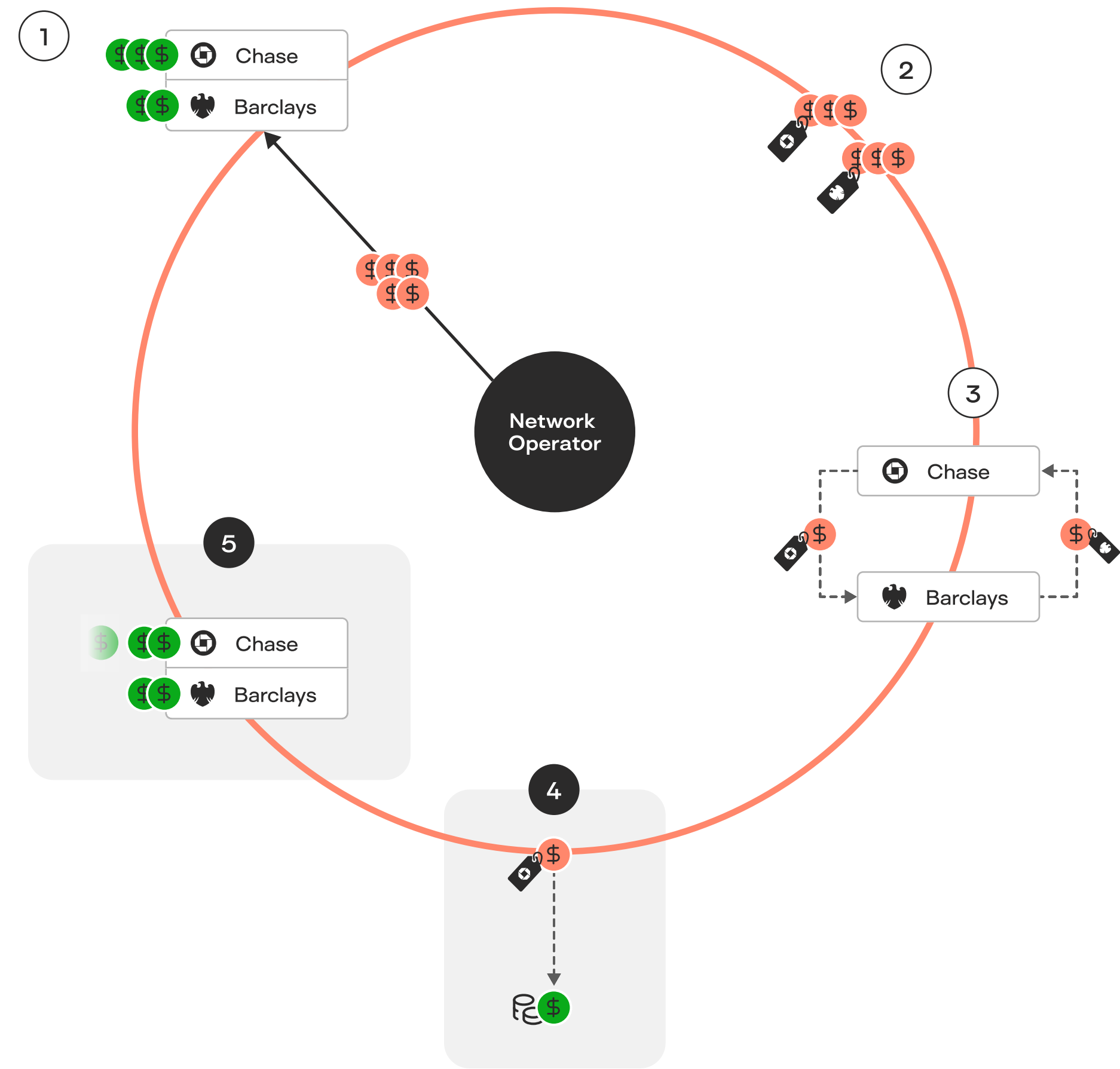
When a participant requests a withdrawal, the network identifies the specific tokens to be removed from circulation. It traces these tokens back to their issuing bank using the token’s unique attributes.

The issuing bank is then notified to initiate a transfer over local payment rails (e.g., ACH, SEPA, SPEI) to the entity requesting the withdrawal. This ensures that the physical funds corresponding to the digital tokens reach the correct recipient.

5 Token Burning and Reserve Adjustment

When the issuing bank sends the physical funds, it simultaneously burns the equivalent digital tokens, removing them from the network. This process maintains the 1:1 backing between digital tokens and physical assets.

The dual process of physical settlement via local rails and digital token burning maintains system integrity. It creates a clear audit trail and ensures digital tokens accurately represent real-world assets at all times.



Setting up the Scenarios

All scenarios in this section use a common baseline setup: participating banks are connected through Keeta Network and have tokenized their respective currencies. These digital tokens represent fiat currencies, enabling efficient and secure cross-border transactions. Each scenario builds upon this foundation to illustrate different aspects of the zero-liquidity model.



Citibank

Holds tokenized USD, referred to as **citibank_USD**. For each tokenized dollar, an equivalent dollar value is held in assets by Citibank.



CFSB

Holds tokenized USD, referred to as **cfsb_USD**. For each tokenized dollar, an equivalent dollar value is held in assets by CFSB.



Chase

Tokenized USD (**chase_USD**) and tokenized pesos (**chase_MXN**) are held in their US and Mexican entities, respectively. For each tokenized dollar and pesos, Chase holds an equivalent value in physical currency.



Banco Dondé

Hold tokenized MXN (**donde_MXN**). For each tokenized mexican peso, an equivalent peso value is held in assets by Banco Dondé

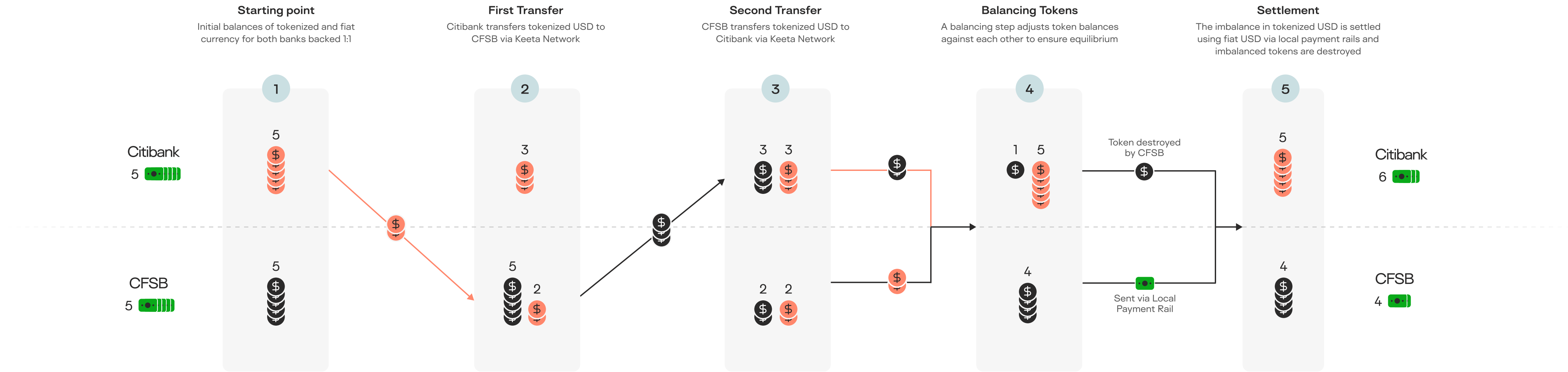
Scenarios	
Domestics Payments & Settlements	Page 49
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Domestic Payments & Settlements

To demonstrate how banks can leverage tokenized currencies for efficient domestic transactions, let's examine a scenario where two U.S. banks exchange digital representations of dollars. This example will illustrate how banks can bypass legacy systems, conduct near-instantaneous transfers, and settle balances at predetermined times using underlying assets.

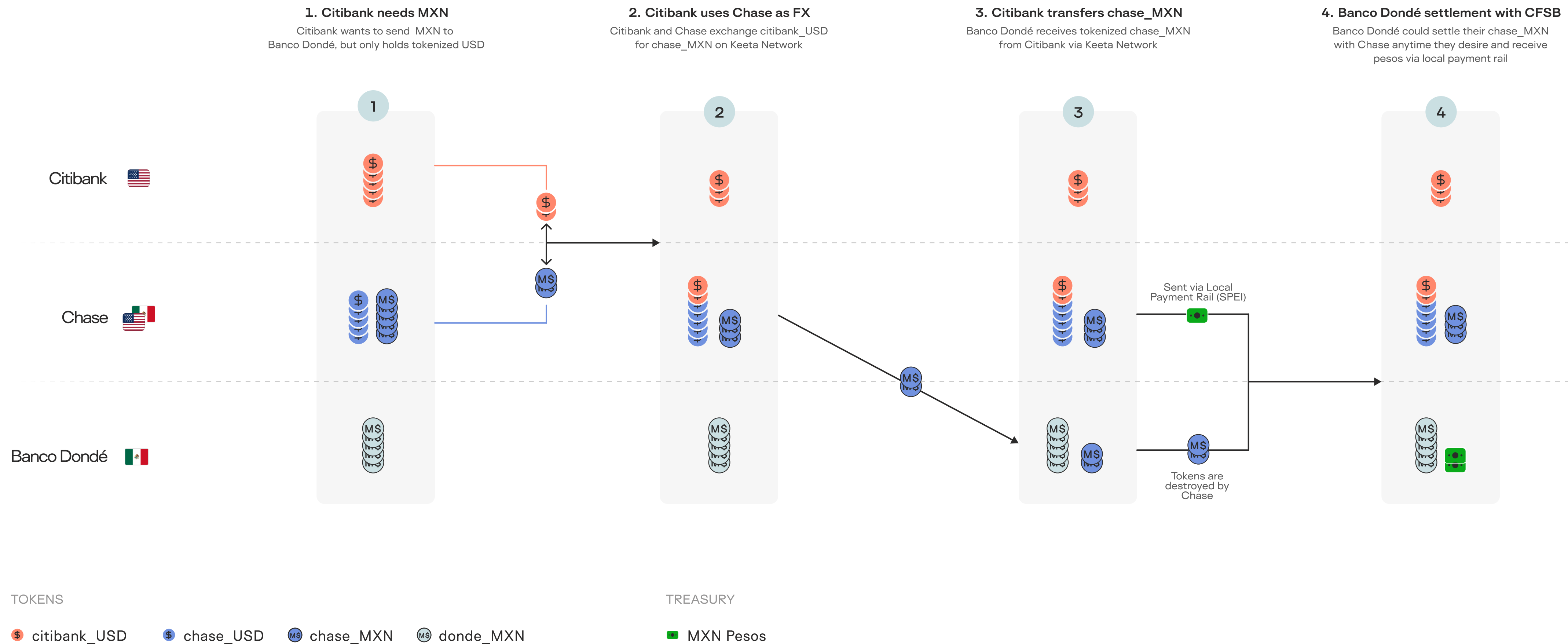
Settlement timing is flexible, occurring when banks mutually agree. Ideally, banks aim to minimize settlement frequency to reduce costs associated with local payment rails. This approach optimizes efficiency while maintaining necessary liquidity.



ZERO-LIQUIDITY MODEL

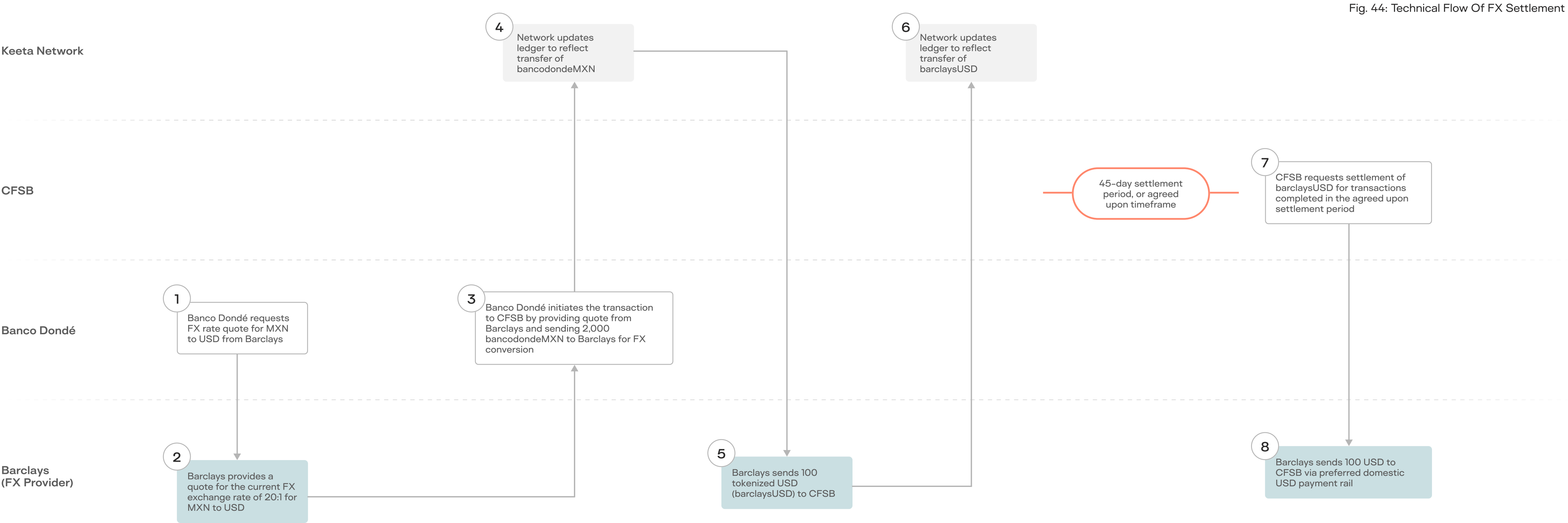
Cross-border Payment with FX & Settlement

This scenario demonstrates a zero-liquidity, cross-border transaction between the U.S. and Mexico. We'll follow the journey of a payment from Citibank (USA) to Banco Dondé (Mexico), facilitated by Chase as an intermediary. This process illustrates how tokenized currencies, FX conversion, and settlement occur on Keeta Network, enabling efficient and secure international transfers.



Technical Flow of Two-Party FX Process and Final Settlement

This slide illustrates the technical flow of a two-party FX process and final settlement in a zero-liquidity model. Banco Dondé requests an FX quote from Barclays and initiates the transaction by sending funds for conversion. Keeta Network updates the ledger to reflect the transfer of funds, and Barclays then sends the tokenized currency (barclaysUSD) to CFSB. After a 45-day settlement period or agreed timeframe, CFSB requests the settlement, and Barclays completes the final transfer via the domestic payment rail, ensuring that the transaction is fully settled.





Domestic & International PoS Flow

Keeta Network facilitates point-of-sale (POS) transactions for both domestic and international payments.

For domestic transactions, the process involves three main steps. First, a US merchant's POS system generates a QR code. Next, the US customer scans this code to initiate payment. Finally, Keeta Network transfers the funds from the customer to the merchant. This straightforward process demonstrates how the network handles local transactions without intermediaries.

International transactions involve additional steps due to the complexities of cross-border payments. When an EU customer interacts with a US merchant's POS system, the process expands to six steps. After the QR code generation and scanning, Keeta Network manages fund transfer, currency conversion (via Barclays as the FX provider), and final settlement with the merchant. This shows how Keeta Network addresses challenges specific to international transactions, such as currency exchange and differing banking systems, within a single infrastructure.

Fig. 45: Domestic PoS Flow

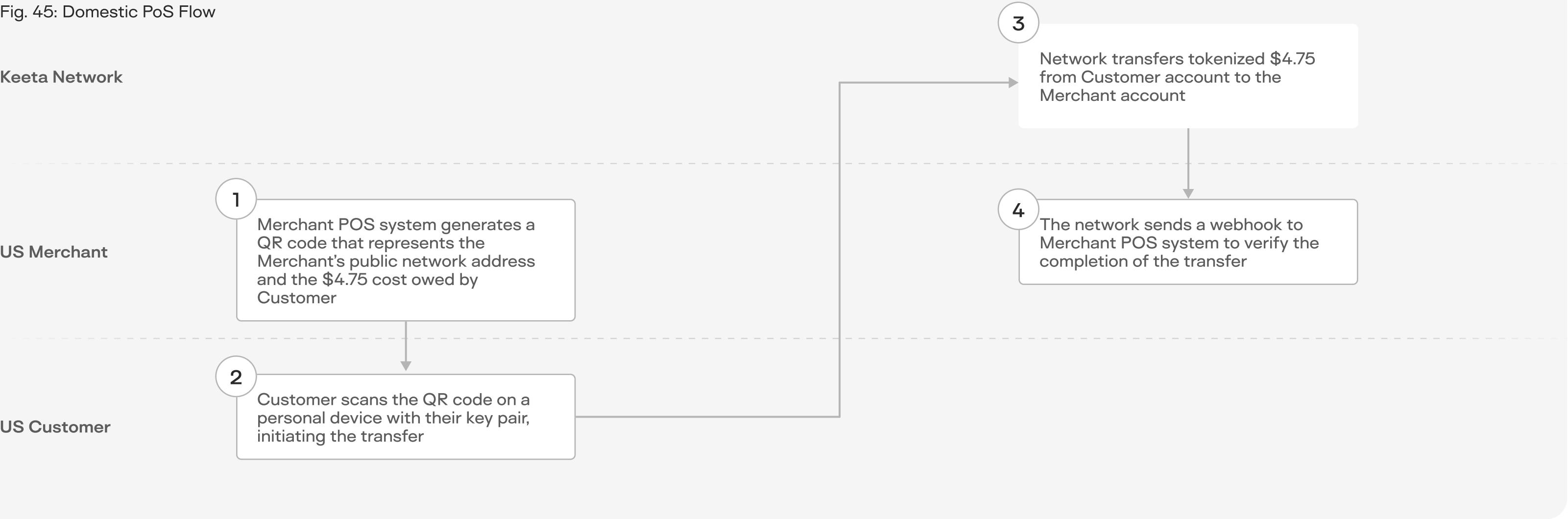
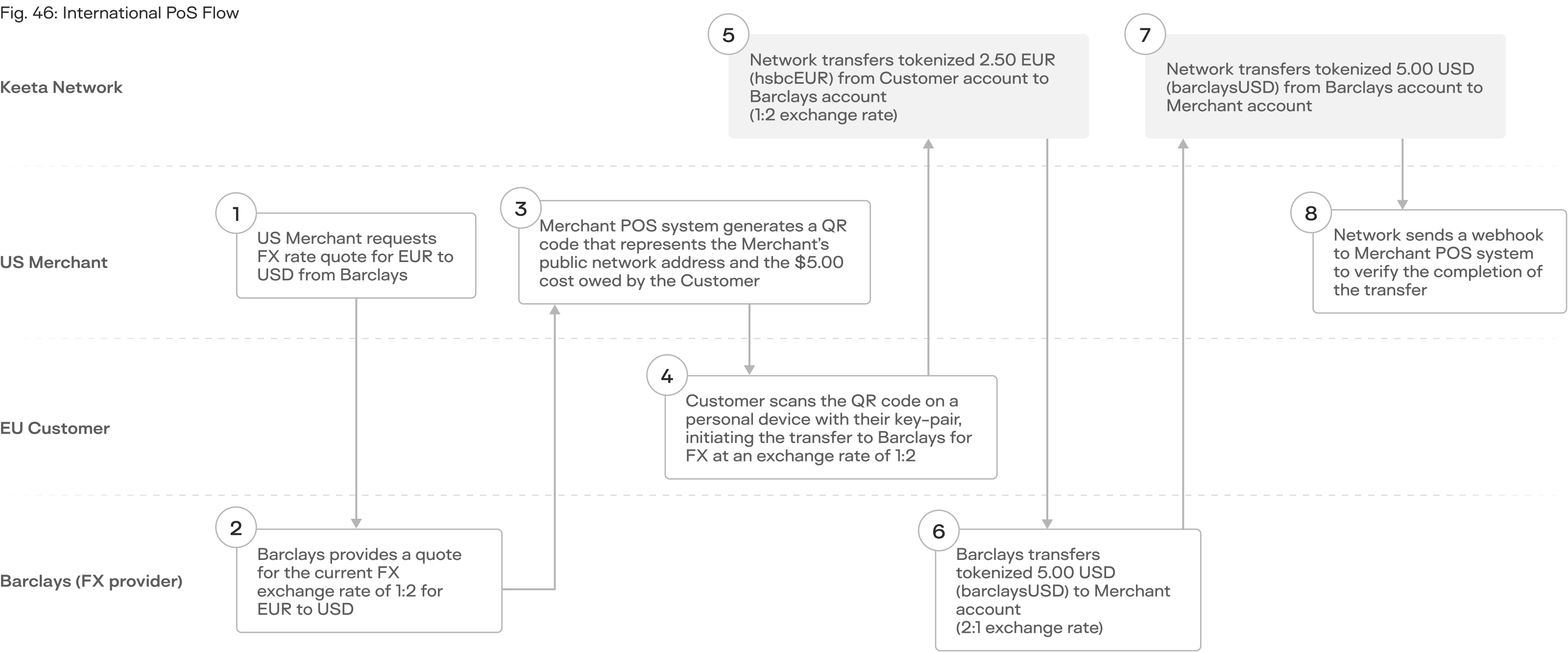


Fig. 46: International PoS Flow



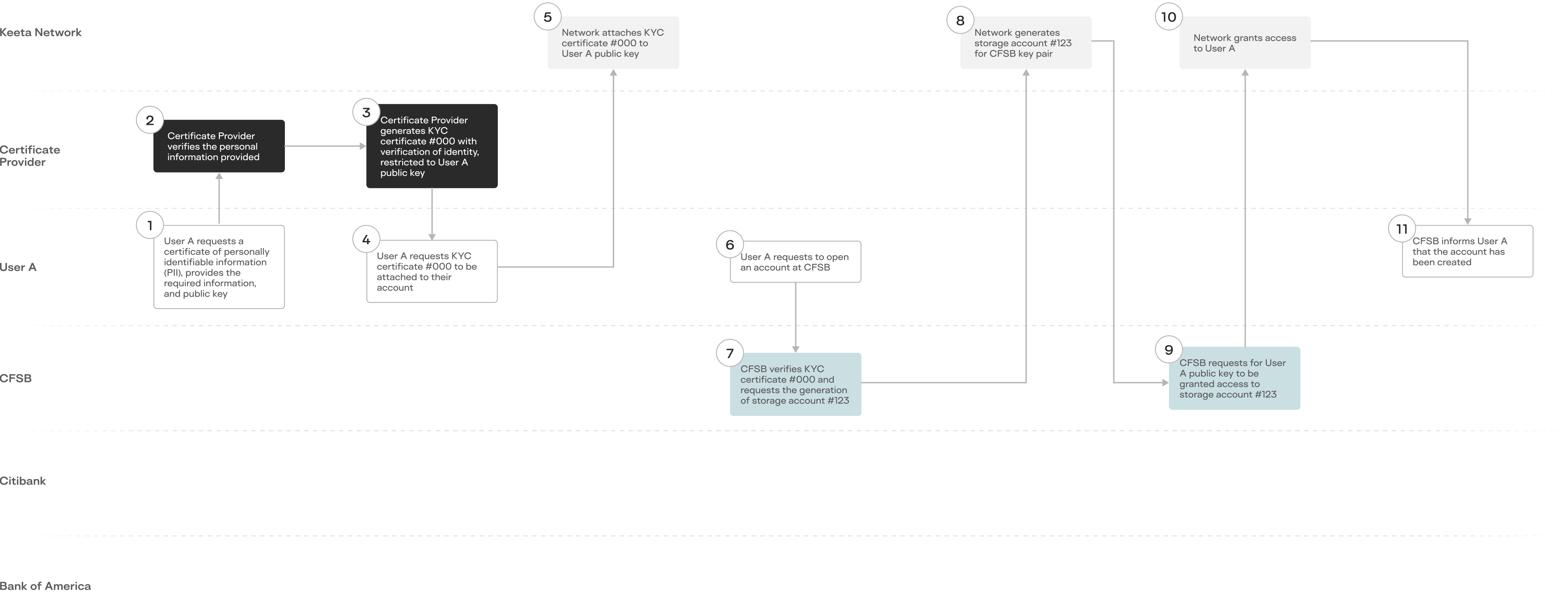


Identity Verification & Account Creation

Keeta Network facilitates a streamlined identity verification process that bridges users, certificate providers, and financial institutions. It starts with User A requesting a KYC certificate by providing personal information and a public key. A Certificate Provider verifies this information and generates a KYC certificate, which the Network then attaches to User A's public key, establishing a verified digital identity on the platform.

The verified identity enables User A to interact securely with financial institutions like CFSB. When User A requests to open an account, CFSB verifies the KYC certificate through the Network. Upon verification, the Network generates a storage account and CFSB requests access for User A. The network grants this access, completing the account creation process.

Fig. 47: Identity & Account Creation

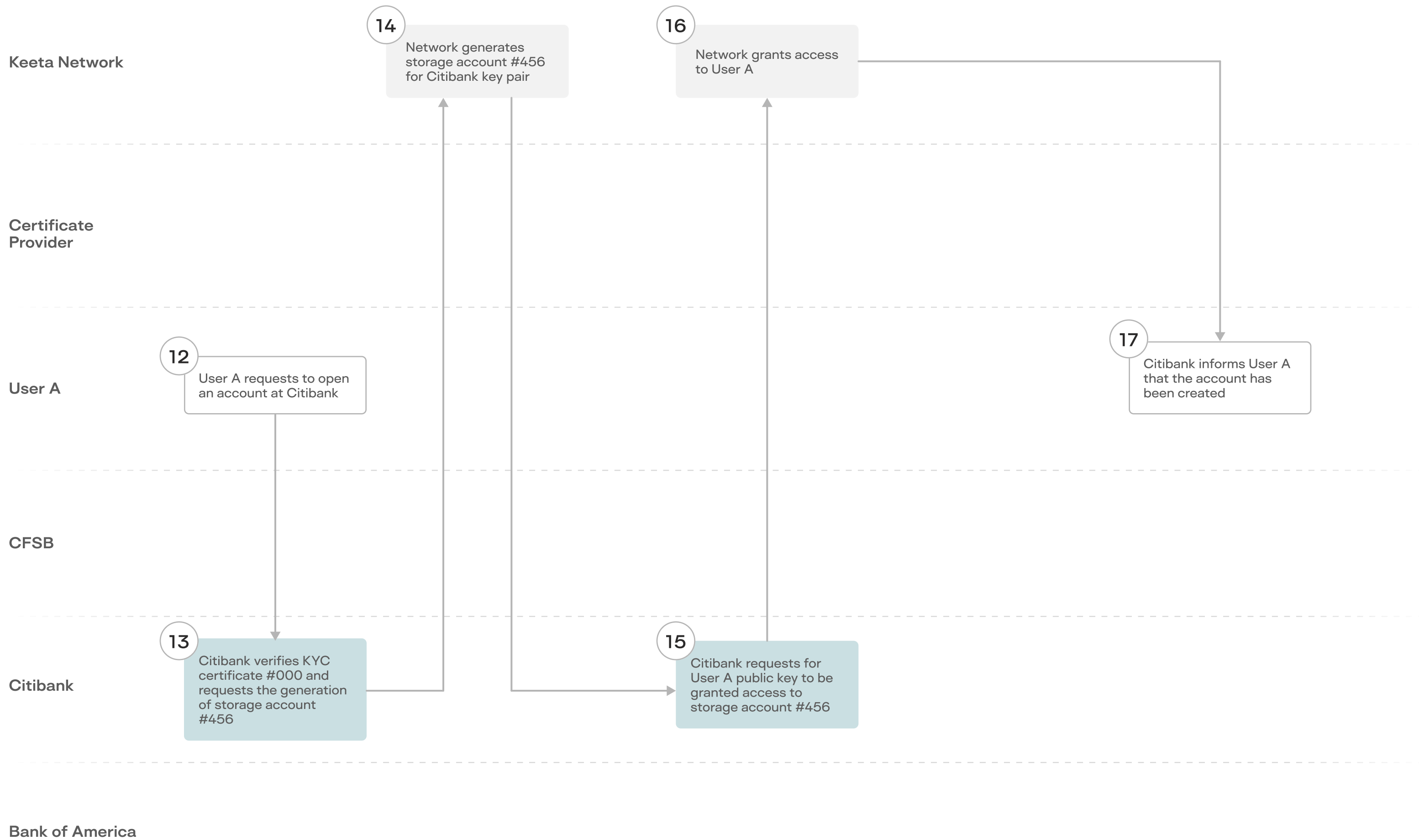


Cross-Institutional Account Creation with Verified Digital Identity

Keeta Network facilitates efficient account creation across multiple financial institutions using a single verified digital identity. After initial verification, User A's identity credentials are securely stored on the network.

When User A wants to open an account at a new bank, they simply request it. The bank, whether CFSB, Citibank, or Bank of America, verifies User A's existing KYC certificate through the network. Eliminating the need for User A to provide and verify personal information repeatedly. The bank then requests a new storage account for User A, which the network generates and grants access to. This reduces time and complexity in multi-bank account creation while maintaining high-security standards.

Fig. 48: Cross-Account Creation



One verification, multiple accounts:
Simplifying banking relationships
through secure, reusable identity.

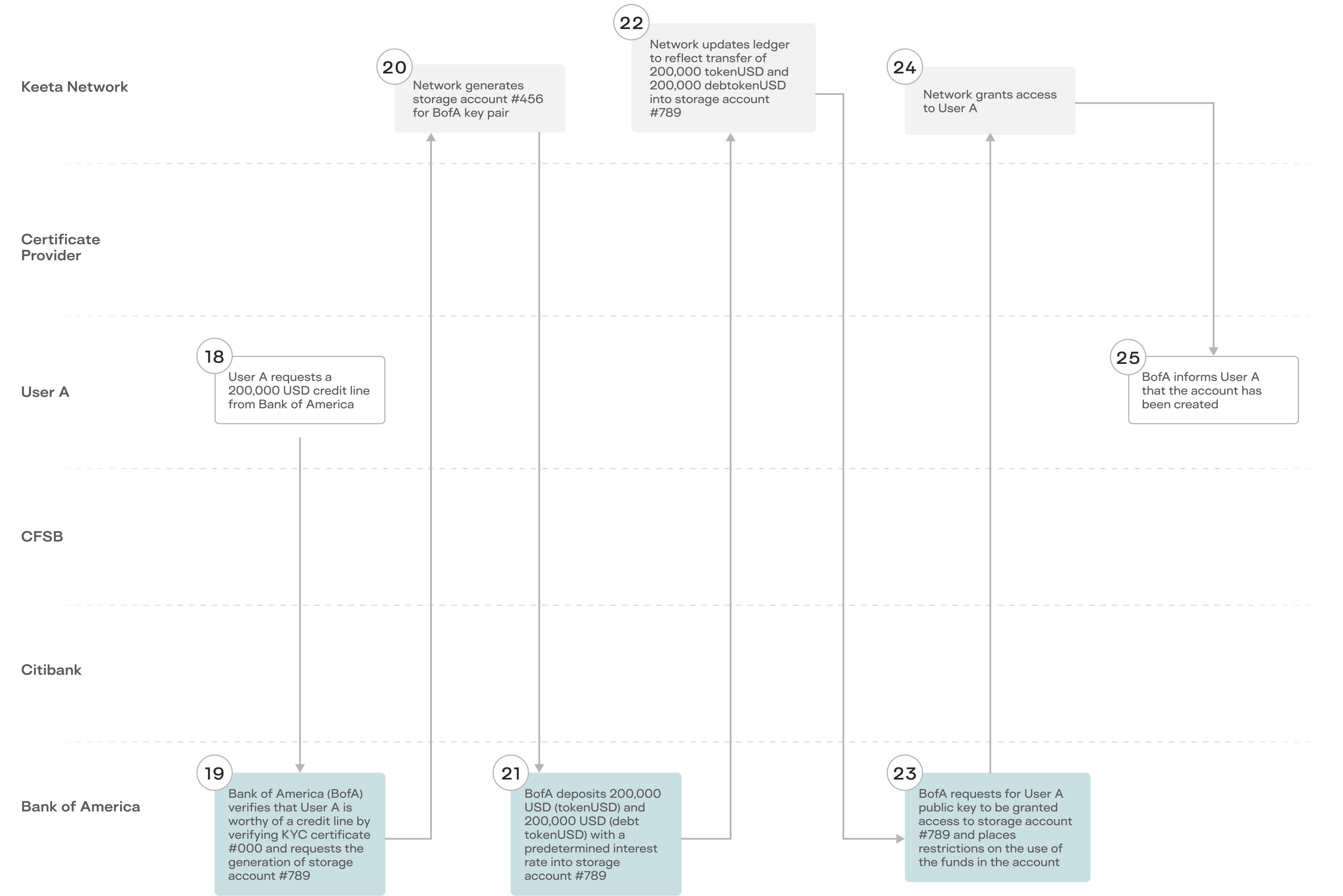
Secure Credit Line Origination

Keeta Network also supports a variety of actions like a credit line application process, and integrating identity verification with financial transactions. User A initiates this process by requesting a \$200,000 USD credit line from Bank of America (BofA). BofA then verifies User A's eligibility using their existing KYC certificate (#000) on the network, eliminating the need for repetitive identity checks.

Upon verification, the network generates a new storage account (#789) for this transaction. BofA then deposits the credit line amount into this account, using both tokenized USD and debt-tokenized USD, each worth \$200,000, with a predetermined interest rate. Keeta Network updates its ledger to reflect this transfer, ensuring transparent and accurate record-keeping.

Finally, BofA requests that User A's public key be granted access to the storage account. Importantly, BofA also applies a restriction, limiting the use of the tokenized USD to specific purchases. This demonstrates how Keeta Network can facilitate complex financial transactions while maintaining security and enforcing specific usage conditions. The process concludes with BofA informing User A that their account has been created, marking the successful completion of the credit line setup.

Fig. 49: Tokenized Mortgage Process Flow





Shaping the Future of Digital Assets



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