STATE STREET

Glossary: Digital Asset Solutions

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Asset definitions and tokenized instruments (part 1)

Term	Definition	Examples
Digital Asset	Any asset issued, transferred, or stored using Distributed Ledger Technology (DLT)	USDC, ETH, tokenized fund shares
Crypto Asset	Digital asset relying on cryptography and DLT	ETH, SOL, USDT
Cryptocurrency	Crypto asset used as a medium of exchange	BTC, ETH
Tokenized Asset	Traditional asset represented digitally on a blockchain	Franklin OnChain U.S. Government Money Fund, Hamilton Lane tokenized credit
Tokenized Real-World Asset (RWA)	Physical/financial asset issued as a token on chain	Tokenized T-bills, PAXG (tokenized gold)
Tokenized Security	Digital token that represents ownership in a traditional security issued on blockchain infrastructure	Tokenized shares or bonds
Security Token	Digital token representing ownership or rights in a financial instrument that falls under securities regulation	Tokenized equity, tokenized bonds
Tokenized Fund — Money Market (tMMF)	Money market fund represented as tokenized shares	BlackRock BUIDL, Franklin OnChain MMF
Tokenized Fund — ETF (tETF)	ETF with tokenized share classes	VanEck tokenized ETF (pilot), Hashdex tokenized products
Tokenized Deposit	Bank deposit represented as a token	Prototype commercial bank deposit tokens
Deposit Token	Tokenized claim against a commercial bank	JPM deposit token / JPM Coin

Asset definitions and tokenized instruments (part 2)

Term	Definition	Examples
Stablecoin	Token pegged to a reference asset (e.g., USD)	USDC, USDT, PYUSD
Algorithmic Stablecoin	Stablecoin that maintains price stability using algorithmic supply adjustments rather than collateral reserves	TerraUSD (historical example)
Stablecoin Reserve	Assets backing a stablecoin to maintain its peg to a reference currency or asset	Treasury bills backing USDC
Central Bank Digital Currency (CBDC)	Central bank–issued digital currency	e-CNY, Sand Dollar (Bahamas)
Wrapped Token	Token representing an asset from another blockchain network that can be used on a different chain	Wrapped Bitcoin (WBTC)

Blockchain networks and infrastructure types (part 1)

Term	Definition	Examples
Blockchain	Distributed ledger architecture where transactions are grouped into sequential blocks that are cryptographically linked and validated by network participants	Bitcoin blockchain, Ethereum blockchain
Distributed Ledger	Database shared and synchronized across multiple participants that records transactions in a decentralized manner without a central authority	Blockchain networks, enterprise DLT systems
Distributed Ledger Technology (DLT)	Technology framework enabling distributed databases where multiple parties maintain synchronized records and validate state changes through cryptographic mechanisms	Hyperledger Fabric, Ethereum
Public Permissionless Network	Open network where anyone can validate	Ethereum, Solana, Bitcoin
Public Permissioned Network	Publicly readable chain with approved validator set	Circle ARC, Canton (public mode)
Private Permissioned Network	DLT network with restricted validators and access	Canton Network (private mode), Hyperledger Fabric (enterprise)
Permissioned Blockchain	Blockchain network where access to validate transactions or participate is restricted to approved entities	Enterprise blockchain networks
Public Blockchain Ecosystem	Open network of developers, validators, users, and applications operating on a public blockchain infrastructure	Ethereum ecosystem
Sidechain	Independent blockchain connected to a main chain that enables asset transfers between networks	Polygon PoS chain

Blockchain networks and infrastructure types (part 2)

Term	Definition	Examples
Layer 1 (L1)	Base blockchain network that processes and records transactions directly on its main ledger	Ethereum, Bitcoin, Solana
Layer 2 (L2)	Secondary protocol built on top of a Layer 1 blockchain to improve scalability, reduce fees, or increase transaction throughput	Optimism, Arbitrum, Lightning Network
Rollup	Layer-2 scaling solution that aggregates many transactions off-chain and posts compressed transaction data to the main blockchain	Optimistic Rollups, ZK Rollups
Zero-Knowledge Rollup (ZK Rollup)	Layer-2 scaling solution that uses cryptographic proofs to verify transaction validity without revealing underlying data	zkSync, StarkNet
Cross-Chain Protocol	Infrastructure enabling communication and asset transfers between different blockchain networks	Cosmos IBC

Consensus, validation, and network security

Term	Definition	Examples
Consensus Mechanism	Protocol by which network participants agree on the validity and ordering of transactions within a distributed ledger	Proof-of-Work (PoW), Proof-of-Stake (PoS)
Proof-of-Work (PoW)	Consensus mechanism where validators compete to solve cryptographic puzzles to add blocks to the blockchain	Bitcoin
Proof-of-Stake (PoS)	Consensus mechanism where validators are selected to create blocks based on the amount of cryptocurrency they stake in the network	Ethereum
Delegated Proof-of-Stake (DPoS)	Consensus mechanism where token holders vote to elect validators who secure the network on their behalf	EOS
Validator	Network participant responsible for verifying transactions and maintaining the integrity of the blockchain ledger	Ethereum validators
Validator Set	Group of participants authorized to validate transactions and produce blocks in a blockchain network	Proof-of-stake networks
Node	Computer participating in a blockchain network that maintains a copy of the ledger and validates transactions	Ethereum node
Full Node	Node that stores the entire blockchain history and independently verifies transactions and blocks	Bitcoin full node
Operator	Participant responsible for running infrastructure nodes that validate or produce new blocks on a blockchain network	Validator operators
Slashing	Penalty mechanism in proof-of-stake networks where validators lose part of their stake if they behave maliciously or fail to follow protocol rules	Ethereum validator penalties
51% Attack	Situation where a single actor or coordinated group controls a majority of a blockchain network's validation or mining power, enabling them to manipulate transaction ordering or reverse transactions	Hypothetical attacks on Bitcoin or Ethereum proof-of-work networks
Economic Security	Level of financial resources required to attack or compromise a blockchain network	Ethereum staking security

Transactions, settlement, and ledger mechanics

Term	Definition	Examples
Transaction	Cryptographically signed record submitted to a blockchain to transfer assets or execute instructions	Bitcoin transfer
Block	Data structure containing a set of validated transactions that is added to a blockchain ledger	Bitcoin block
Block Time	Average time required for a new block to be created and added to a blockchain	Bitcoin ~10 minutes, Ethereum ~12 seconds
Ledger	System used to record, verify, and store transactions or asset ownership information	Blockchain ledgers, accounting ledgers
Ledger Fork	Event where a blockchain diverges into separate chains due to protocol rule changes or network disagreement among validators	Ethereum / Ethereum Classic fork
Memory Pool (Mempool)	Temporary holding area where pending blockchain transactions are stored before being validated and included in a block	Bitcoin mempool
Finality	Point at which a blockchain transaction becomes irreversible and cannot be altered or removed from the ledger	Ethereum finality after validator confirmation
Settlement Finality	Legal and operational certainty that a transaction has been irrevocably completed and cannot be reversed	On-chain delivery-versus-payment settlement
Atomic Settlement	Transaction mechanism where the transfer of two assets occurs simultaneously such that either both transfers occur or neither does, eliminating settlement risk	Cross-chain swaps, Delivery-versus-Payment (DvP) settlement
Mining	Process in proof-of-work networks where participants use computational power to validate transactions and produce new blocks	Bitcoin mining

Smart contracts, DeFi and market structure

Term	Definition	Examples
Smart Contract	Self-executing program stored on a blockchain that automatically enforces predefined rules or contractual conditions	DeFi protocols, token issuance contracts
Decentralized Finance (DeFi)	Ecosystem of financial services built on blockchain infrastructure that operates without centralized intermediaries	Lending protocols, decentralized exchanges
Decentralized Exchange (DEX)	Trading platform operating via smart contracts that allows users to exchange digital assets without intermediaries	Uniswap, Curve
Automated Market Maker (AMM)	Protocol that uses mathematical formulas and liquidity pools to price and execute asset trades without traditional order books	Uniswap
Liquidity Pool	Smart contract that holds tokens used to facilitate trading or lending within decentralized finance protocols	Uniswap pools
Liquidity Mining	Incentive program where users receive tokens for providing liquidity to decentralized protocols	DeFi reward programs
Yield Farming	Strategy where users allocate digital assets across DeFi protocols to maximize returns	Lending and liquidity provision
Governance Token	Token granting holders the ability to vote on protocol decisions or changes within decentralized networks	UNI, COMP
Token Standard	Technical specification that defines how tokens operate within a blockchain ecosystem	ERC-20, ERC-721
Total Value Locked (TVL)	Total value of assets deposited within decentralized finance protocols	DeFi protocol metrics
Liquidity	Ease with which an asset can be traded without significantly affecting its market price	Exchange order book depth
Maximal Extractable Value (MEV)	Value that validators can capture by strategically ordering, inserting, or excluding transactions within blocks	DeFi arbitrage

Wallets, keys, and custody

Term	Definition	Examples
Wallet	Application or device that stores private keys and enables interaction with blockchain networks	Trust Wallet
Digital Wallet	Software or hardware interface used to manage private keys and interact with blockchain networks for sending, receiving, or storing digital assets	MetaMask, Coinbase Wallet
Hot Wallet	Wallet connected to the internet used for frequent transactions	Exchange wallets
Cold Storage	Offline storage of digital asset private keys to enhance security	Hardware wallets
Hardware Wallet	Physical device designed to securely store private keys offline, reducing exposure to cyber-attacks	Ledger Nano, Trezor
Multisignature Wallet (Multisig)	Wallet requiring multiple private keys to authorize transactions.	Institutional treasury wallets
Private Key	Secret cryptographic key that enables an asset holder to sign transactions and prove ownership of blockchain assets	Wallet private keys
Public Key	Cryptographic key derived from a private key used to verify digital signatures or generate wallet addresses	Ethereum wallet address keys

Data, interoperability, and cryptography

Term	Definition	Examples
Oracle	Service that provides external data to blockchain networks so smart contracts can access information from outside the blockchain	Chainlink price feeds
Oracle Network	Decentralized infrastructure providing external data feeds to smart contracts	Chainlink
Interoperability	Ability for different blockchain networks or financial systems to exchange data, assets, or instructions seamlessly	Cross-chain protocols, interoperability layers
Interchain Messaging	Protocol enabling blockchain networks to exchange data or instructions	LayerZero
State Channel	Layer-2 solution enabling participants to conduct multiple transactions off-chain before settling the final result on-chain	Lightning Network payment channels
Payment Channel	Off-chain transaction channel between two participants that allows multiple transfers before settlement on-chain	Bitcoin Lightning channels
Cryptographic Hash	Mathematical function converting data into a fixed-length output used to secure blockchain data integrity	SHA-256 in Bitcoin

Governance, incentives, and token economics

Term	Definition	Examples
Staking	Process where participants lock digital assets in a blockchain network to help validate transactions and secure the network, typically earning rewards	Ethereum staking
Gas Fee	Fee paid to validators or miners to process and record transactions on a blockchain network	Ethereum gas fees
Tokenization	Process of creating a blockchain-based digital representation of an existing asset or financial instrument	Tokenized real estate, tokenized funds
Token Vesting	Schedule that gradually releases tokens to founders, investors, or employees over time	Startup token distribution
Token Burn	Permanent removal of tokens from circulation to reduce supply	Binance token burns
Circulating Supply	Number of tokens currently available and actively traded in the market	Crypto market data metrics
Airdrop	Distribution of tokens to wallet addresses, typically used for community incentives or governance distribution	DeFi protocol launches
Whitelisting	Process of approving specific wallet addresses for participation in token sales or network access	NFT mint allowlists
Programmable Money	Digital currency with embedded rules that automatically execute payments or conditions	Smart contract payments

Types of security around private keys

Term	Definition	Examples
Warm Wallet	Hybrid custody model where keys are secured with additional controls but remain connected to systems capable of transaction execution	Institutional treasury wallets
Hardware Security Module (HSM)	Enterprise-grade physical device that securely generates, stores, and manages cryptographic keys within a tamper-resistant environment	Institutional custody HSM infrastructure
Multi-Party Computation (MPC) Wallet	Cryptographic system where a private key is split into multiple shares and distributed across parties or systems, enabling transaction signing without reconstructing the full key	Fireblocks MPC wallet infrastructure
Threshold Signature Scheme (TSS)	Cryptographic method allowing a predefined subset of participants to jointly produce a valid signature without any individual holding the full private key	MPC-based signing frameworks
Air-Gapped System	Computing environment physically isolated from external networks to prevent remote access or cyber intrusion	Cold storage signing machines
Key Sharding	Process of dividing a private key into multiple encrypted fragments stored separately to reduce single point of failure risk	Distributed custody architectures
Key Management System (KMS)	Software or hardware infrastructure used to create, store, distribute, and control cryptographic keys	Cloud-based KMS solutions
Key Ceremony	Formalized process for securely generating and distributing cryptographic keys under controlled conditions	Institutional custody onboarding
Key Rotation	Practice of periodically replacing cryptographic keys to reduce long-term exposure risk	Institutional security policies
Key Escrow	Arrangement where a third party securely holds backup key material for recovery or regulatory purposes	Enterprise recovery frameworks
Seed Phrase (Recovery Phrase)	Human-readable sequence of words used to regenerate a private key or wallet	12- or 24-word wallet backups
Secure Enclave	Isolated hardware-based execution environment designed to protect sensitive cryptographic operations	Apple Secure Enclave
Custodial Wallet	Wallet where a third party controls the private keys on behalf of users	Centralized exchange custody
Self-Custody	Model where the asset holder maintains exclusive control over their private keys	Personal hardware wallet usage

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