



SmartCon 2025

Sergey Nazarov

SMARTCON 2025 / NYC

Financial System Failures Stop Our Globally Connected Society



Dec. 3, 2001

**Enron Corp. Files
Largest U.S. Claim for
Bankruptcy**

The New York Times

**BEAR
STEARNS**

March 2008

**Bear Stearns investors:
Who lost big**



**LEHMAN
BROTHERS**

Sept. 15, 2008

**Banking crisis: Lehman
Brothers files for
bankruptcy protection**

*The
Guardian*

wirecard

June 25, 2020

**Wirecard files for
insolvency amid German
accounting scandal**

*The
Guardian*



Nov. 11, 2022

**Embattled Crypto
Exchange FTX Files for
Bankruptcy**

The New York Times



March 17, 2023

**Silicon Valley Bank's
parent company files for
bankruptcy**

*The
Guardian*

CREDIT SUISSE

March 22, 2023

**Credit Suisse collapse
threatens Switzerland's
wealth management crown**

The Reuters logo, featuring a circular icon with a grid pattern and the word "REUTERS" in a bold, black font.



Creating a Cryptographically Guaranteed Financial System



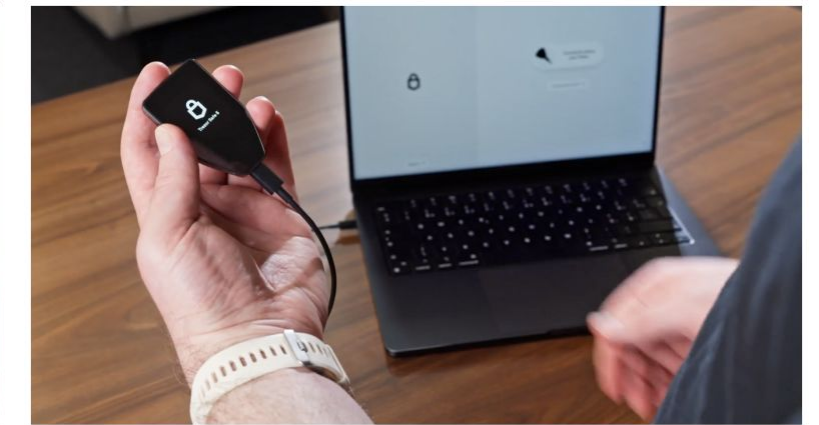
Legal/Paper Promises



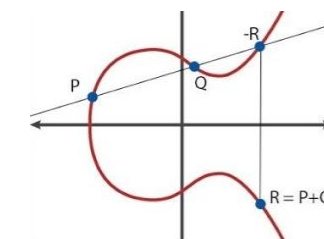
LEHMAN
BROTHERS

svb Silicon Valley
Bank

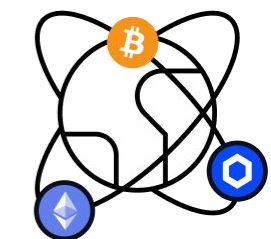
- ✗ Counterparty risk is opaque and higher
- ✗ Transparency is purposefully removed
- ✗ Key systems don't operate as expected



Cryptographic/Mathematical Guarantees



$$y^2 = x^3 + 7$$

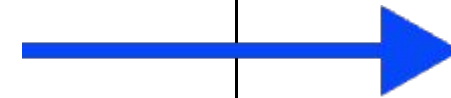
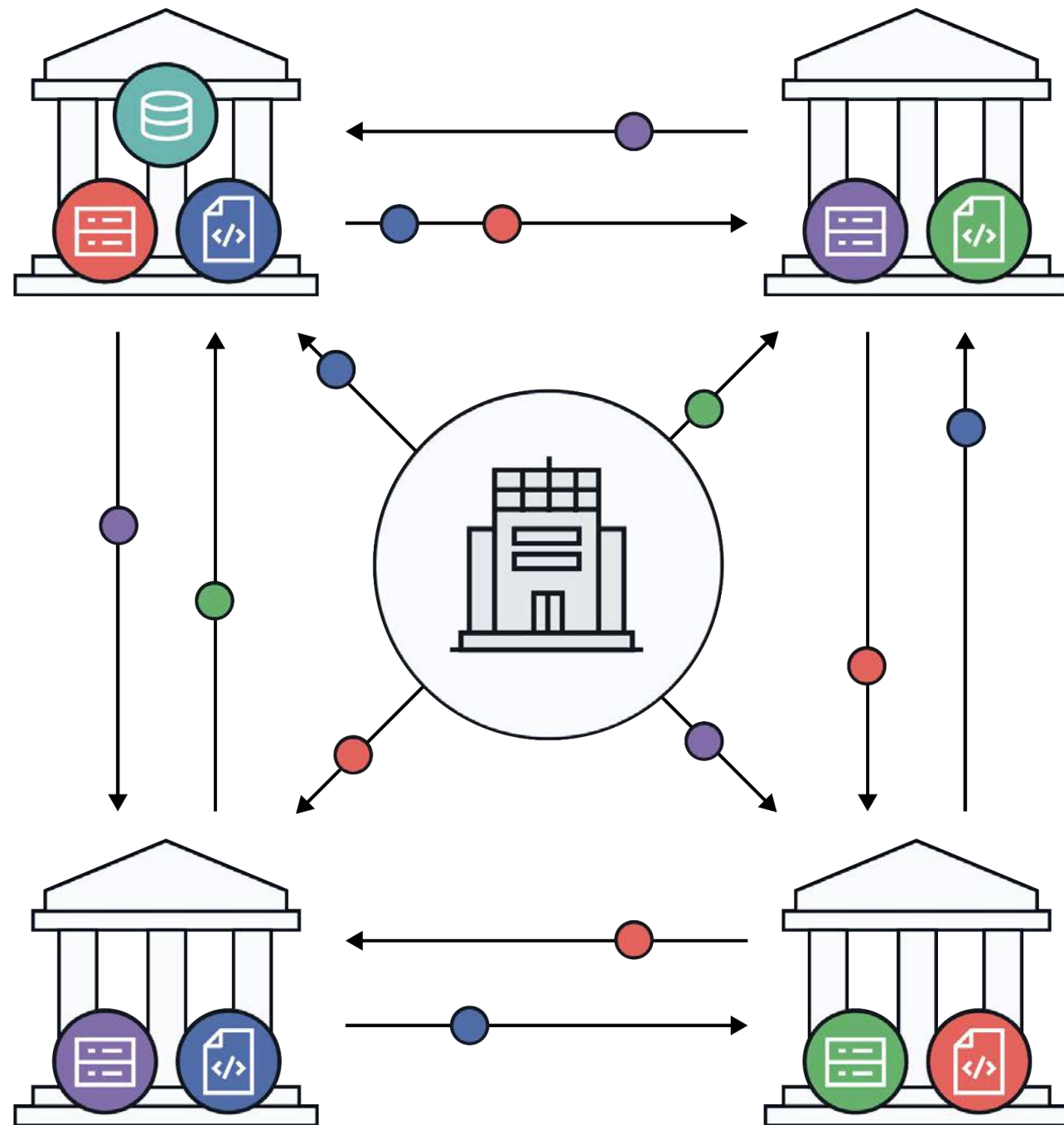


- ✓ Counterparty risk is transparent and lower
- ✓ Transparency is unavoidably built-in
- ✓ Key systems do operate as expected

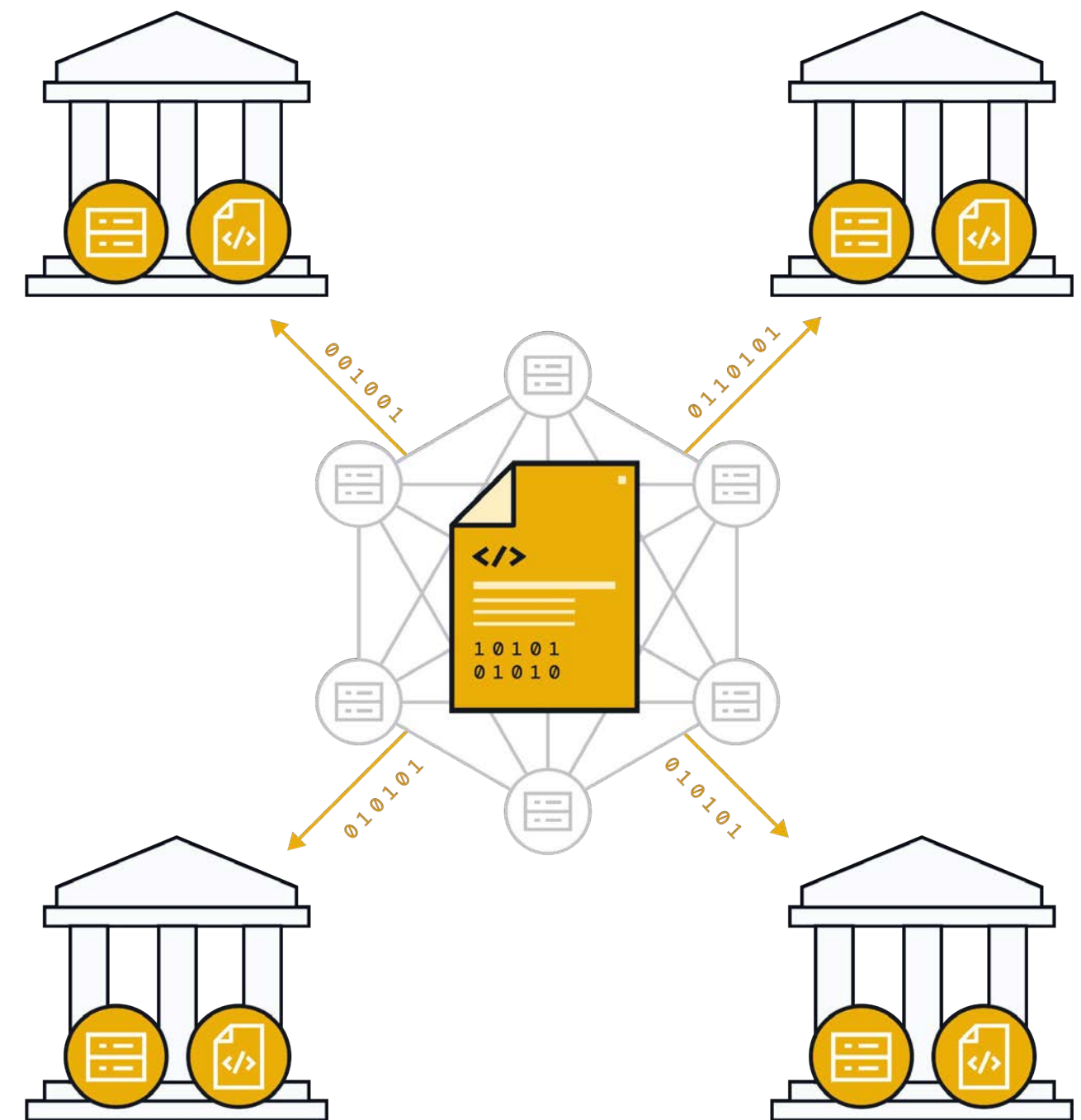


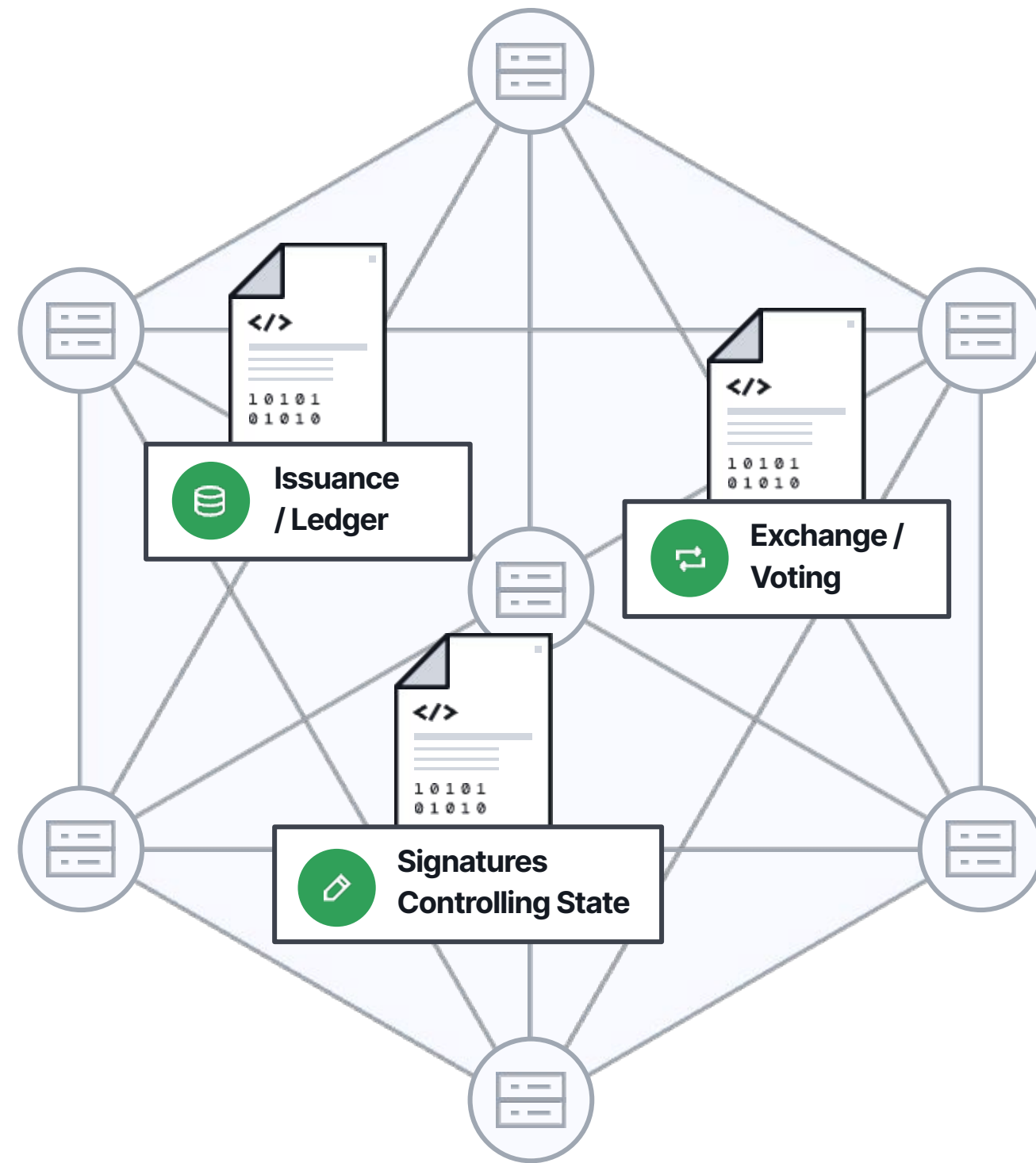
Creating a Single Golden Source of Truth On-Chain

Highly Siloed Transaction and Asset Data



Single Source Transactions are Efficient and Secure





SMART CONTRACT

Smart Contracts V1

- Single Chain Environment
- Token Issuance/Ledger
- Exchange and Voting
- No External Data Needed
- No Cross Chain Needed
- No Identity/Compliance



Tokenization



Data



Cross-Chain



Identity / Compliance



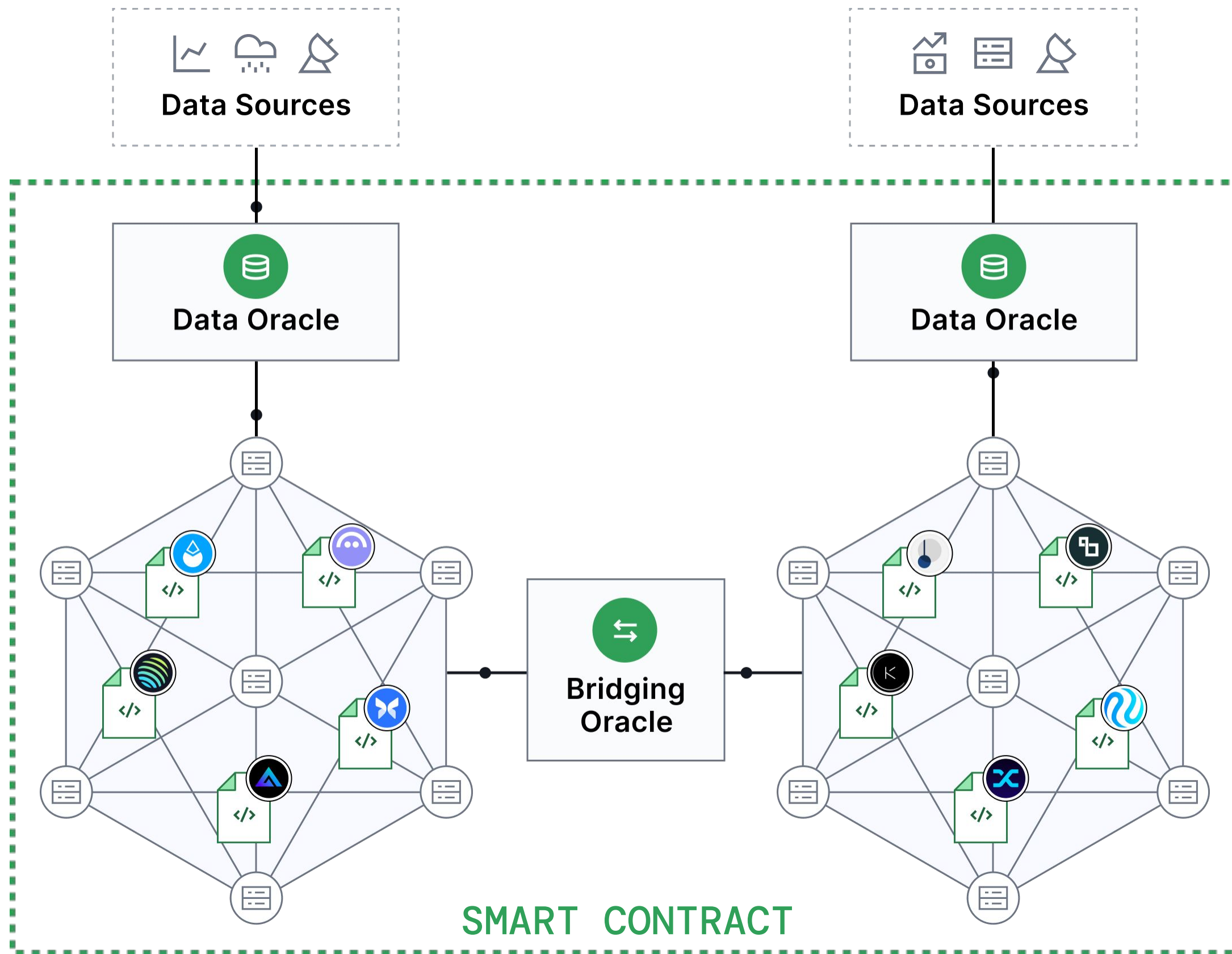
Privacy



AI



Orchestration

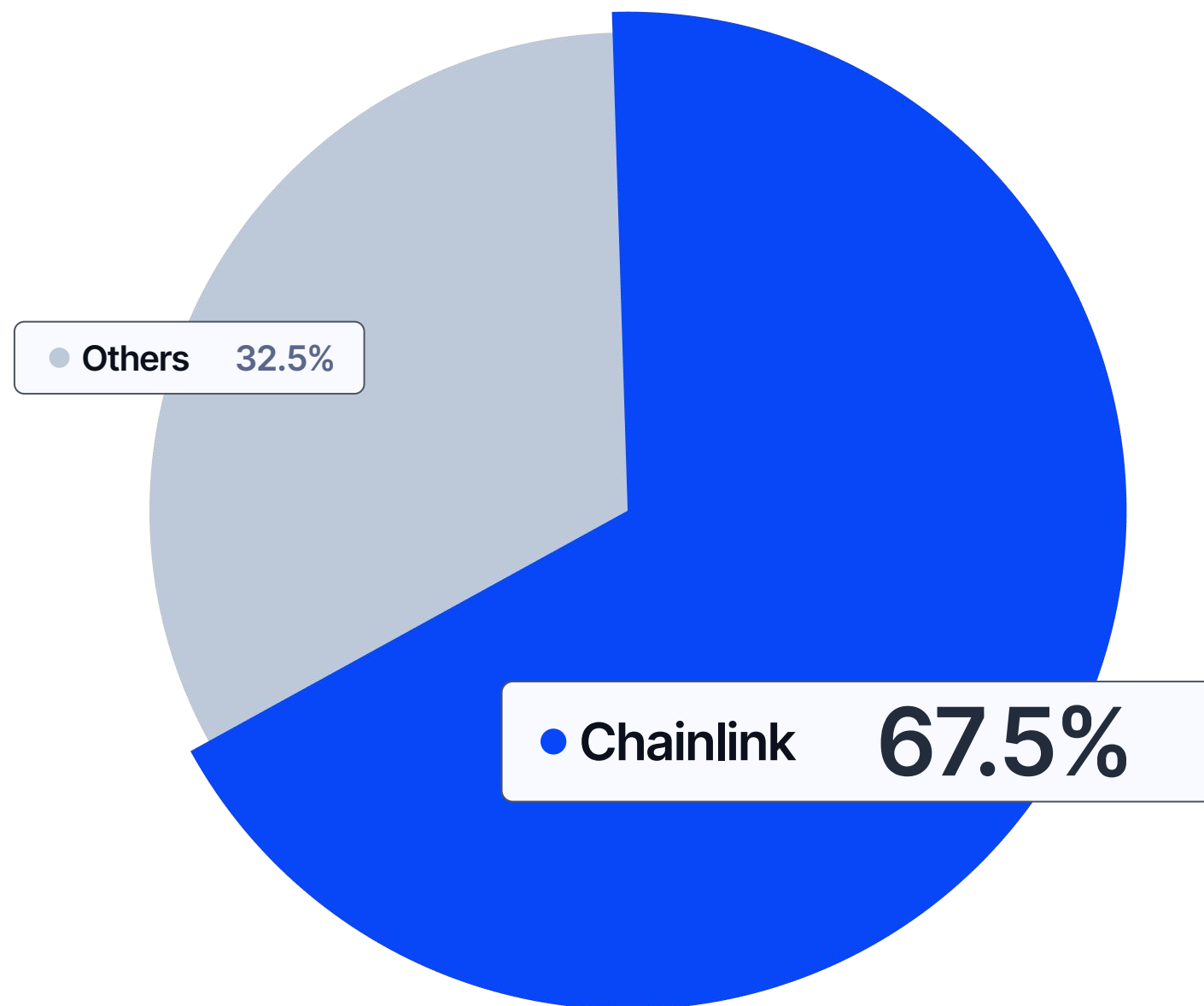


Smart Contracts V2

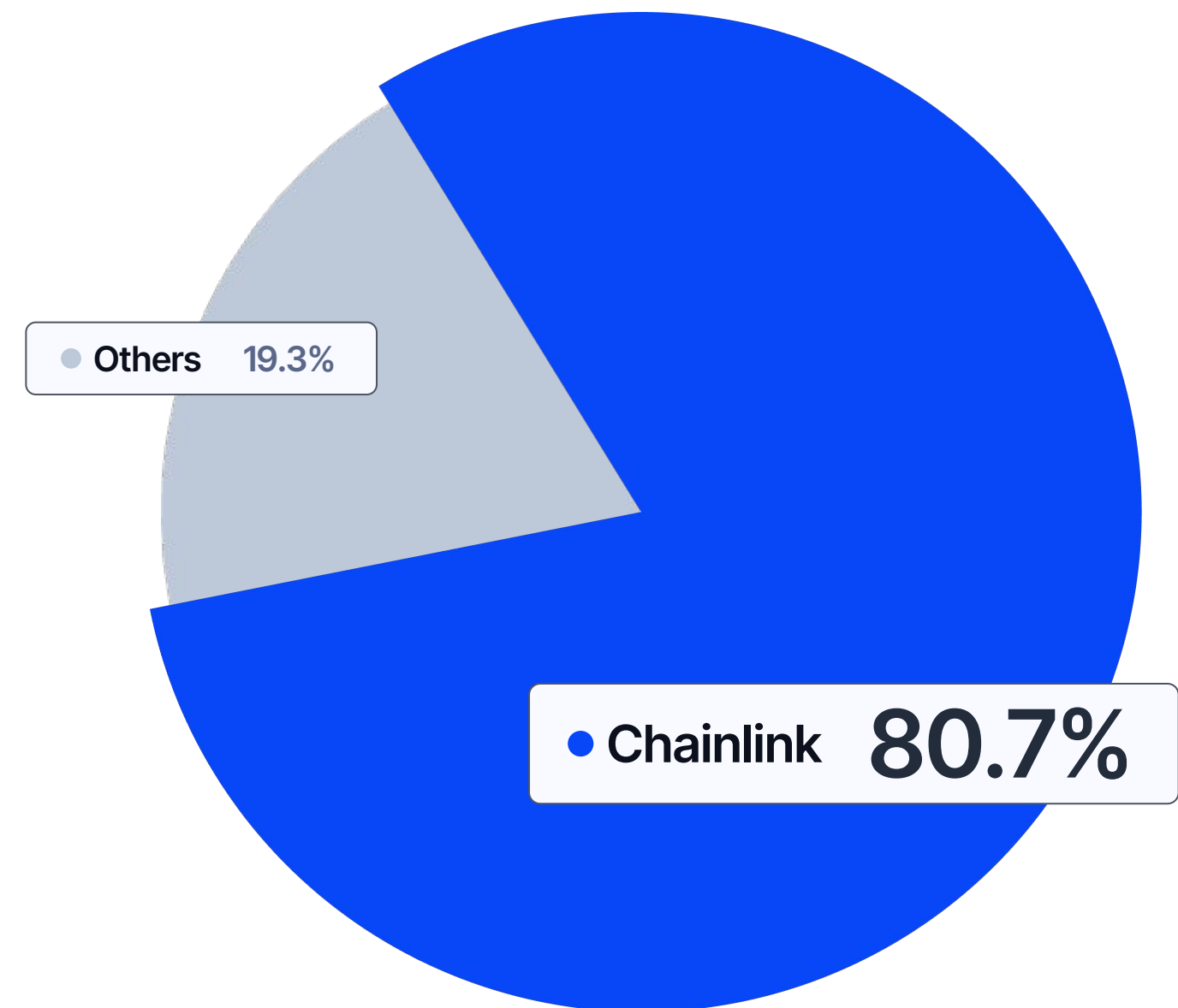
- DeFi Requires Data Feeds
- Multichain World Emerges
- Requires Data Oracles
- Requires Bridging Oracles
- No Identity/Compliance
- No Privacy Capabilities

Chainlink is Already The Global Standard for Oracles

Oracle Market Share: All Chains



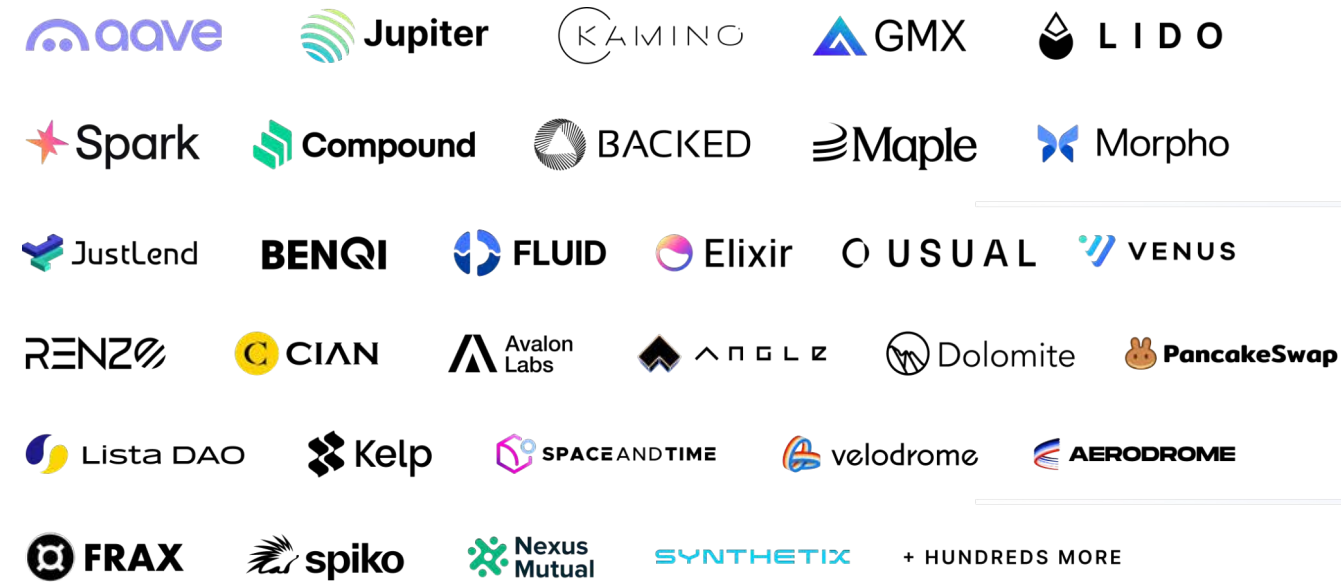
Oracle Market Share: Ethereum



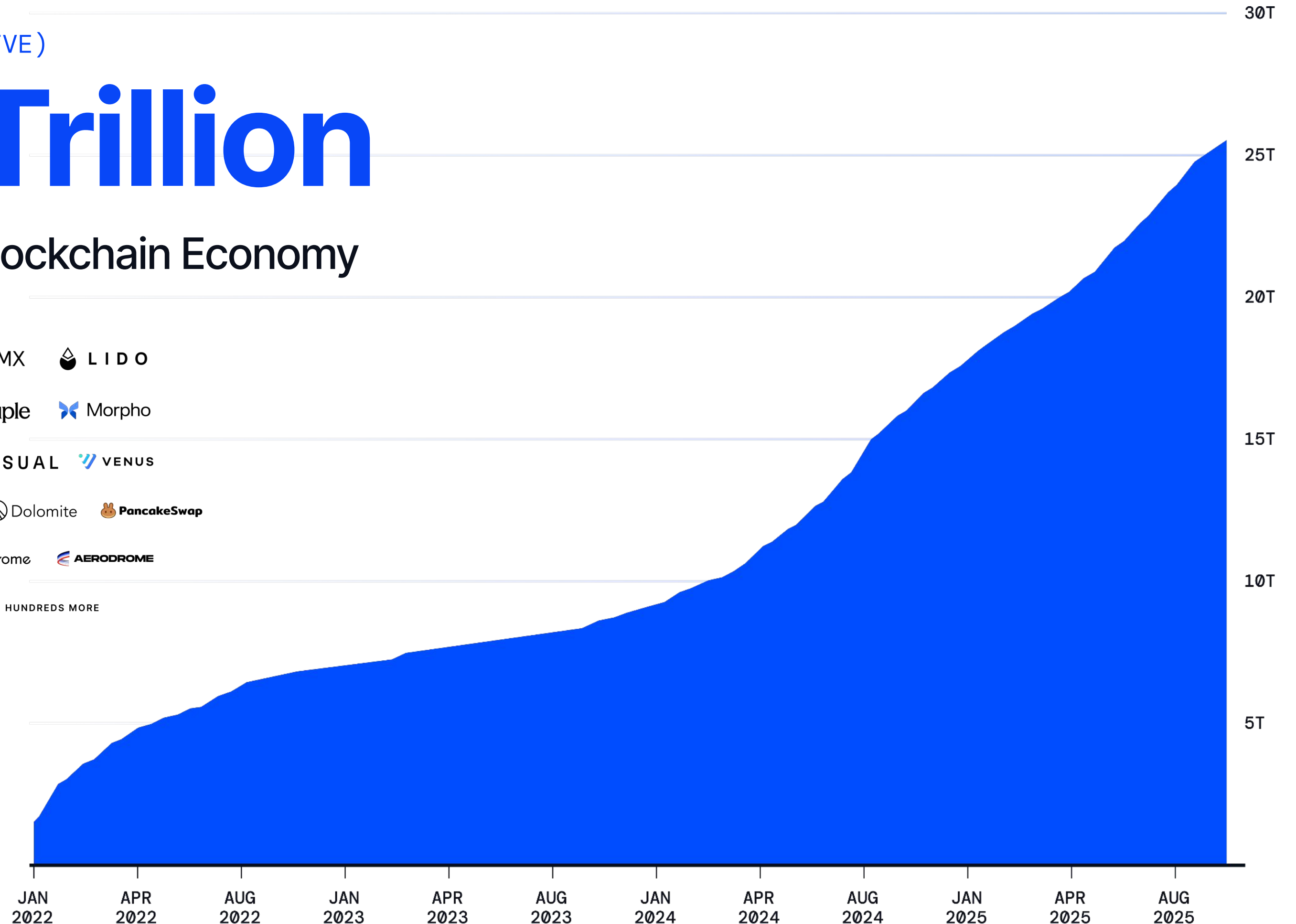
TRANSACTION VALUE ENABLED (TVE)

\$26.4 Trillion

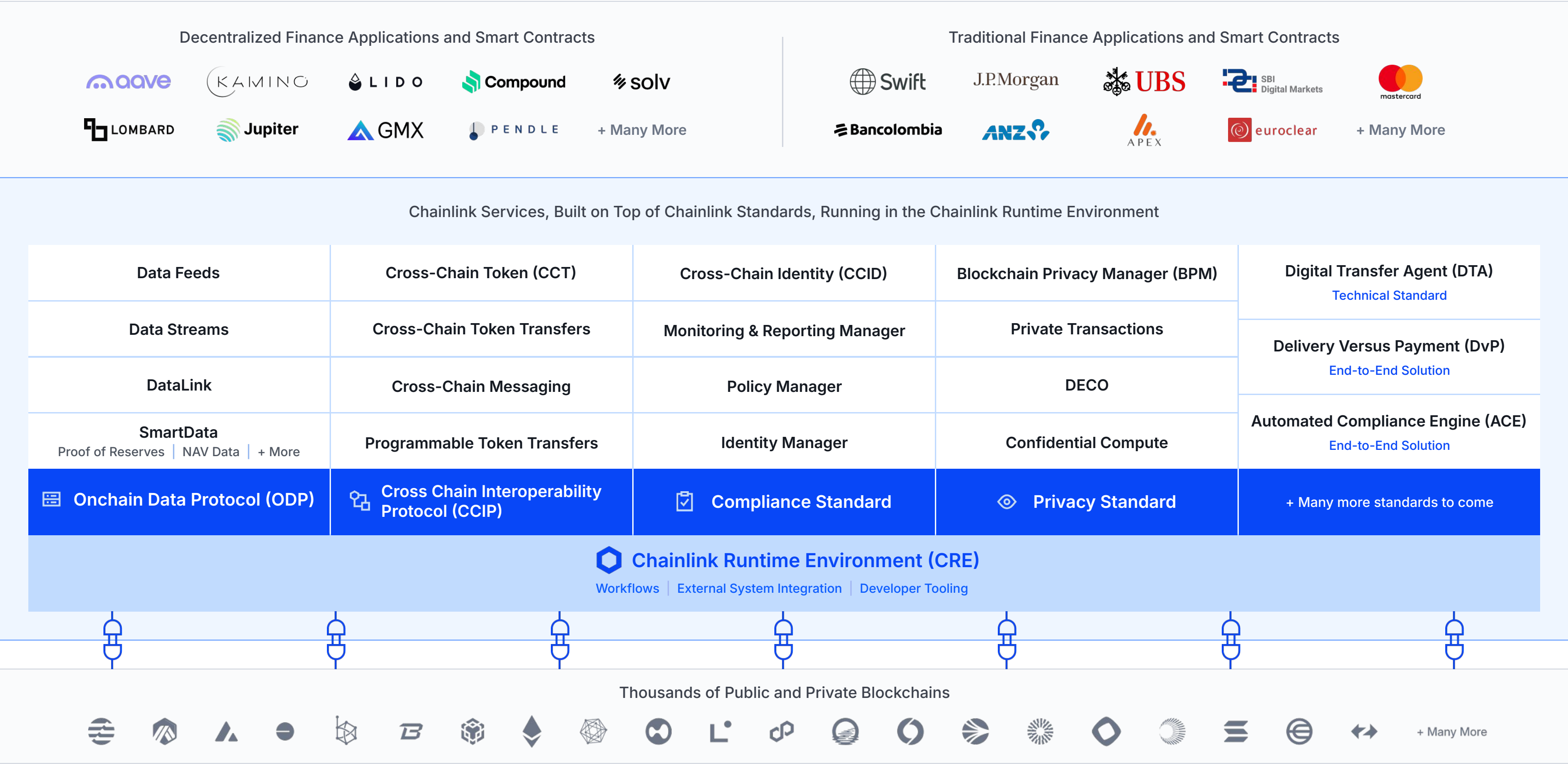
Powering the Global Blockchain Economy



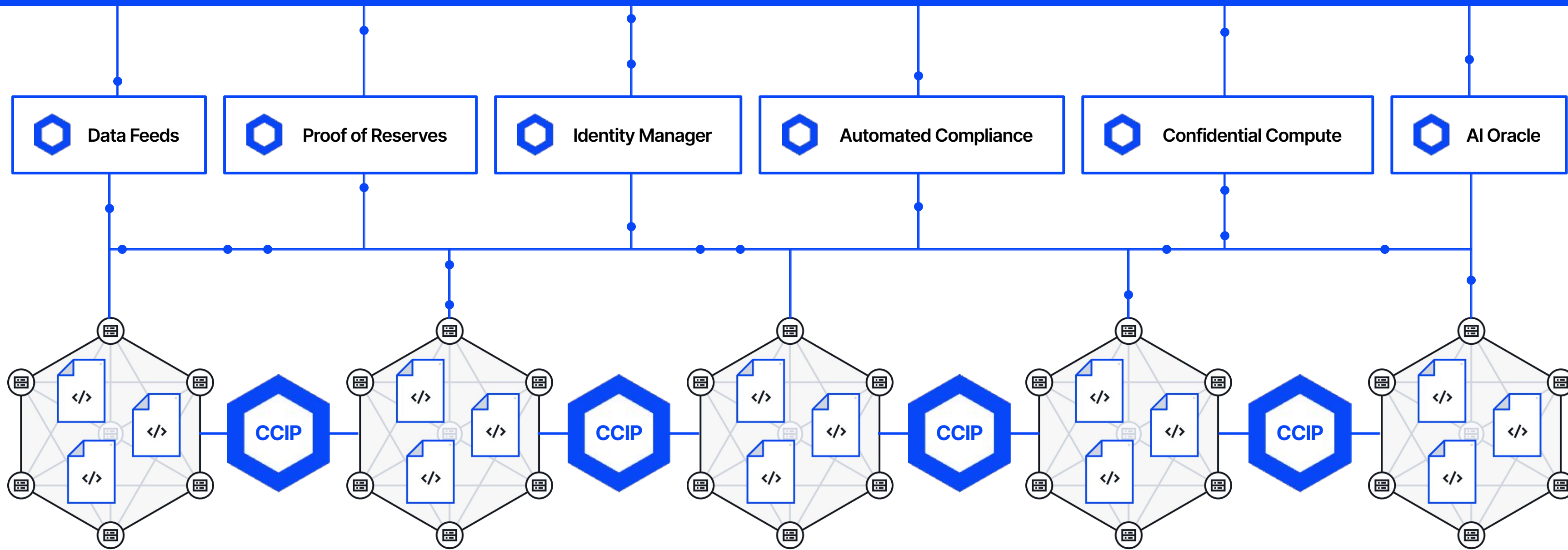
TVE is calculated by taking the sum of the USD value associated with each transaction utilizing a Chainlink oracle.



The CRE Enables Easy Implementation of Chainlink Standards



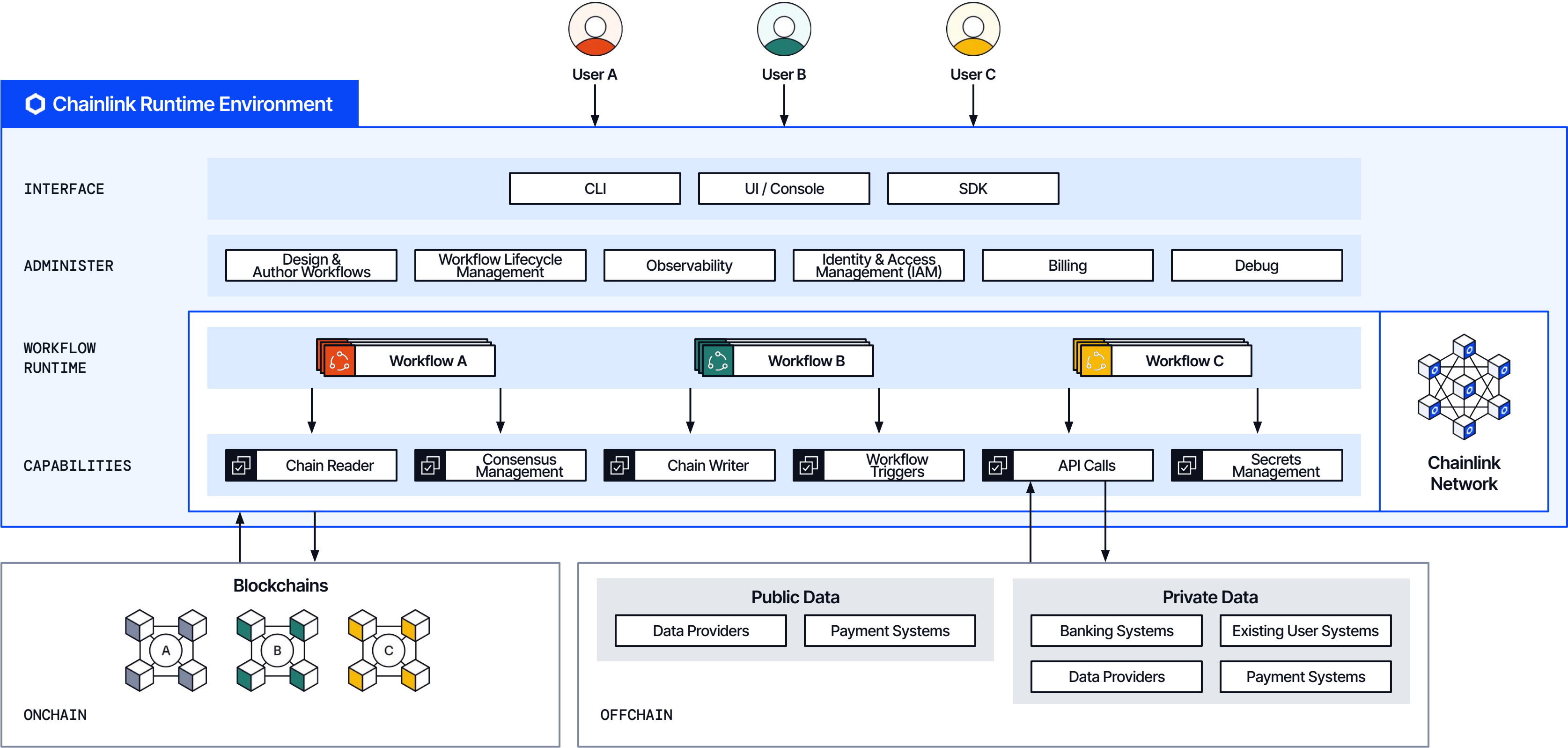
Chainlink Runtime Environment (CRE): Smart Contract and Oracle Orchestration



SMART CONTRACT

- ✓ Tokenization
- ✓ Data
- ✓ Cross-Chain
- ✓ Identity / Compliance
- ✓ Privacy
- ✓ AI
- ✓ Orchestration

Chainlink Runtime Environment (CRE) Architecture



Verification of Reserves and Minting of Stablecoins Based on Real Reserves

OFFCHAIN



CHAINLINK RUNTIME ENVIRONMENT

HTTP Trigger

```
func onHttpTrigger(config *Config, runtime cre.Runtime, payload *http.  
Payload) (*MyResult, error) {  
    logger := runtime.Logger()  
  
    httpTriggerPayload := &HttpTriggerPayload{}  
    if err := json.Unmarshal(payload.Input, httpTriggerPayload); err !=
```

Secure Mint check

Proof of Reserve

```
totalReserves, ok := new(big.Int).SetString(evmConfig.TotalReserves, 10)  
if !ok {  
    logger.Error("failed to parse total reserves from config",  
        "totalReserves", evmConfig.TotalReserves)  
    return nil, fmt.Errorf("failed to parse total reserves: %s",  
        evmConfig.TotalReserves)
```

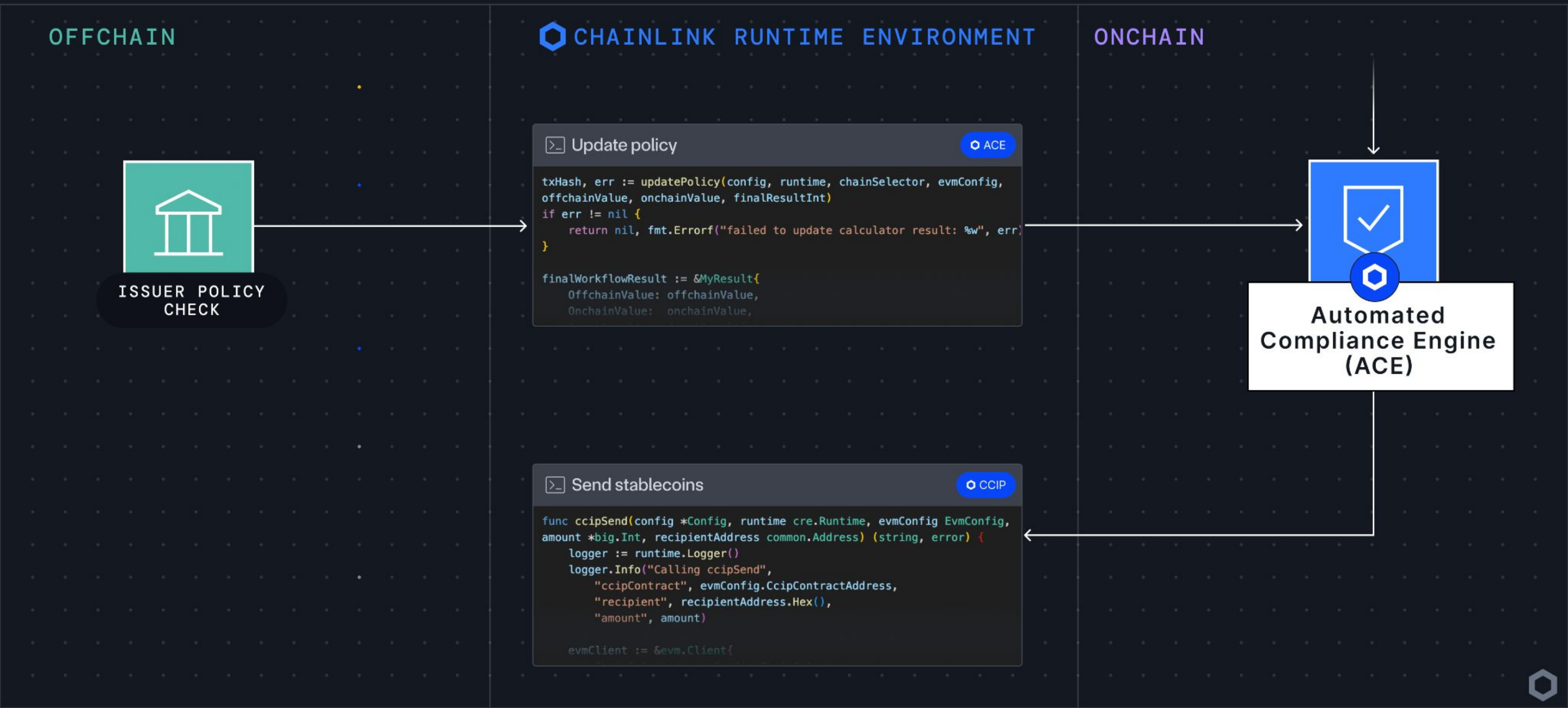
Chainwrite

```
func transferTokens(config *Config, runtime cre.Runtime, evmConfig  
EvmConfig, recipientAddress common.Address, amount *big.Int) (string,  
error) {  
    logger := runtime.Logger()  
    logger.Info("Transferring tokens",  
        "recipientAddress", recipientAddress, "amount", amount)
```

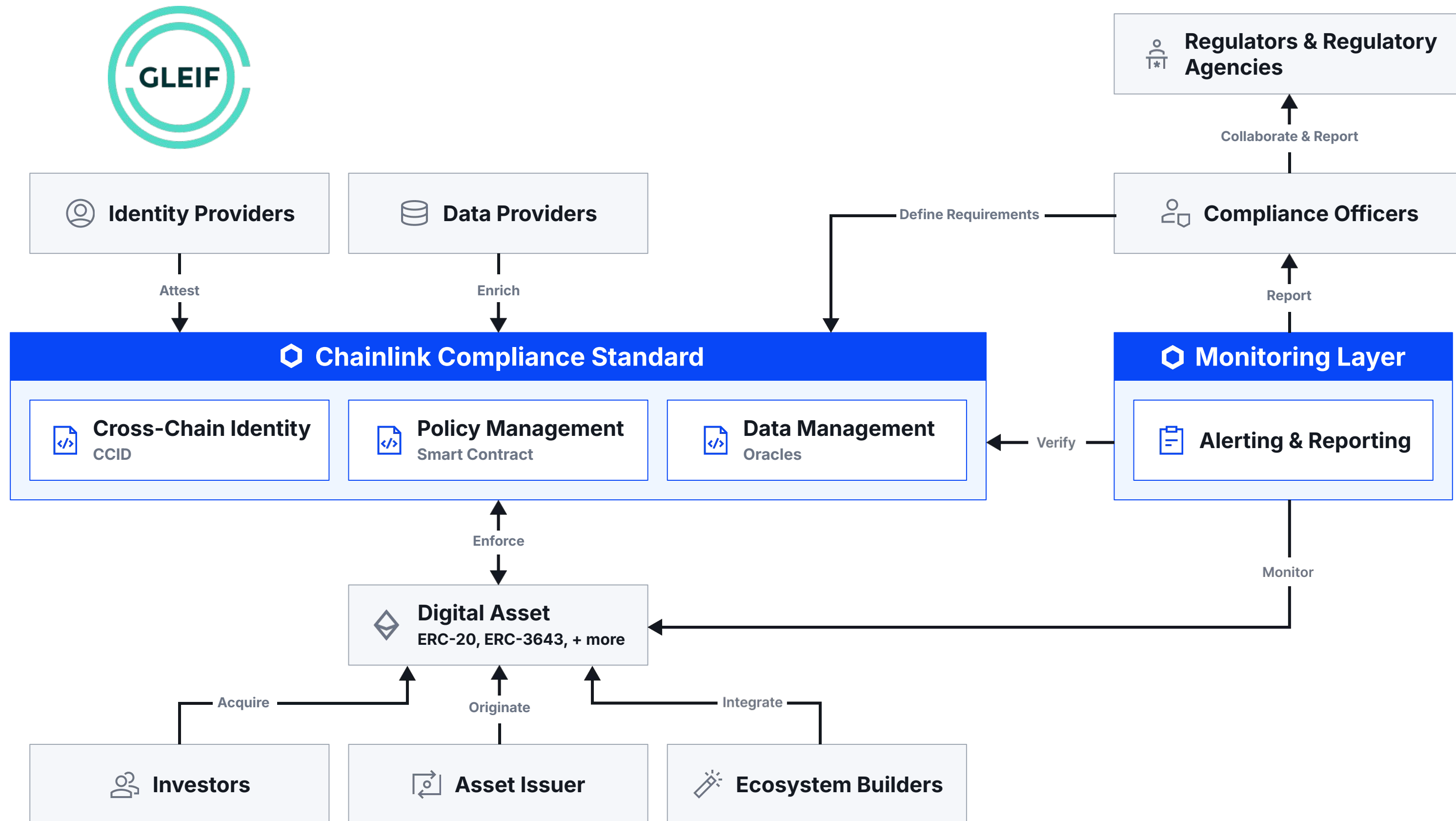
ONCHAIN



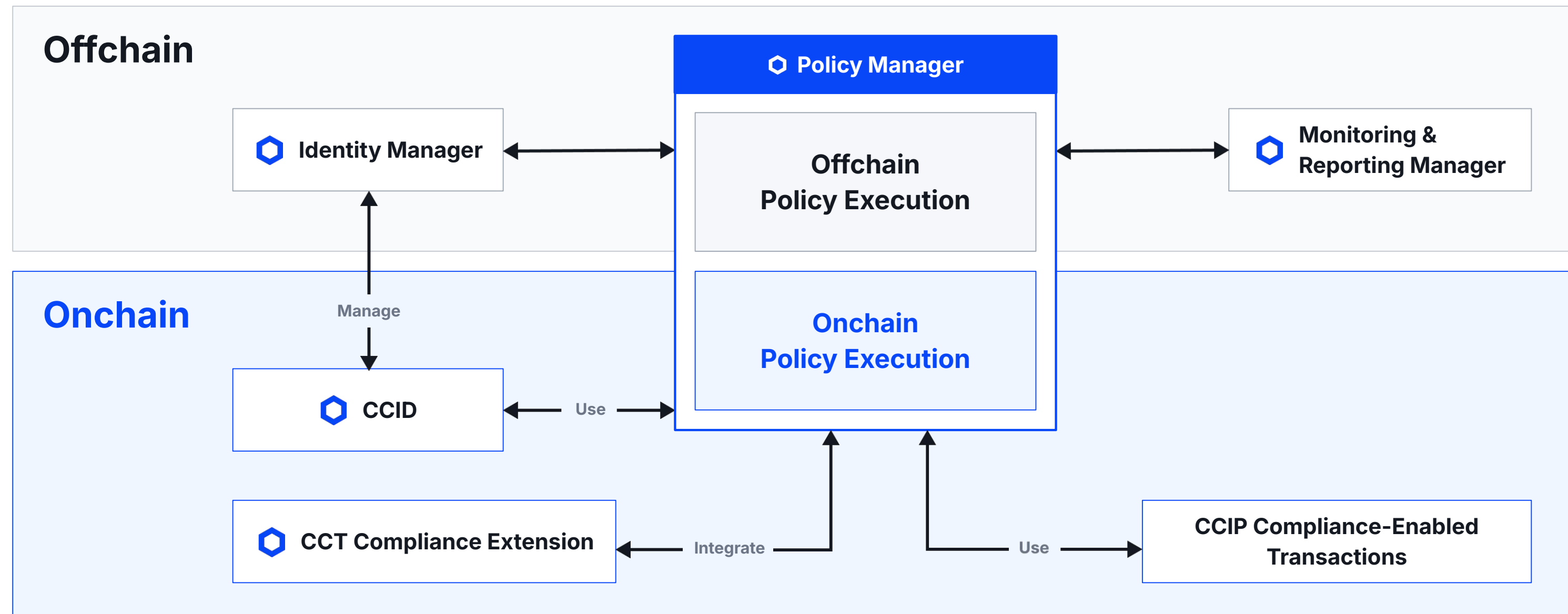
Compliance Checks for Stablecoin Transfers to Approved Users



Compliance Across Chains and Across Token Standards



Identity Management, Policy Enforcement, and Reporting Across Blockchains and Various Digital Asset Regulations

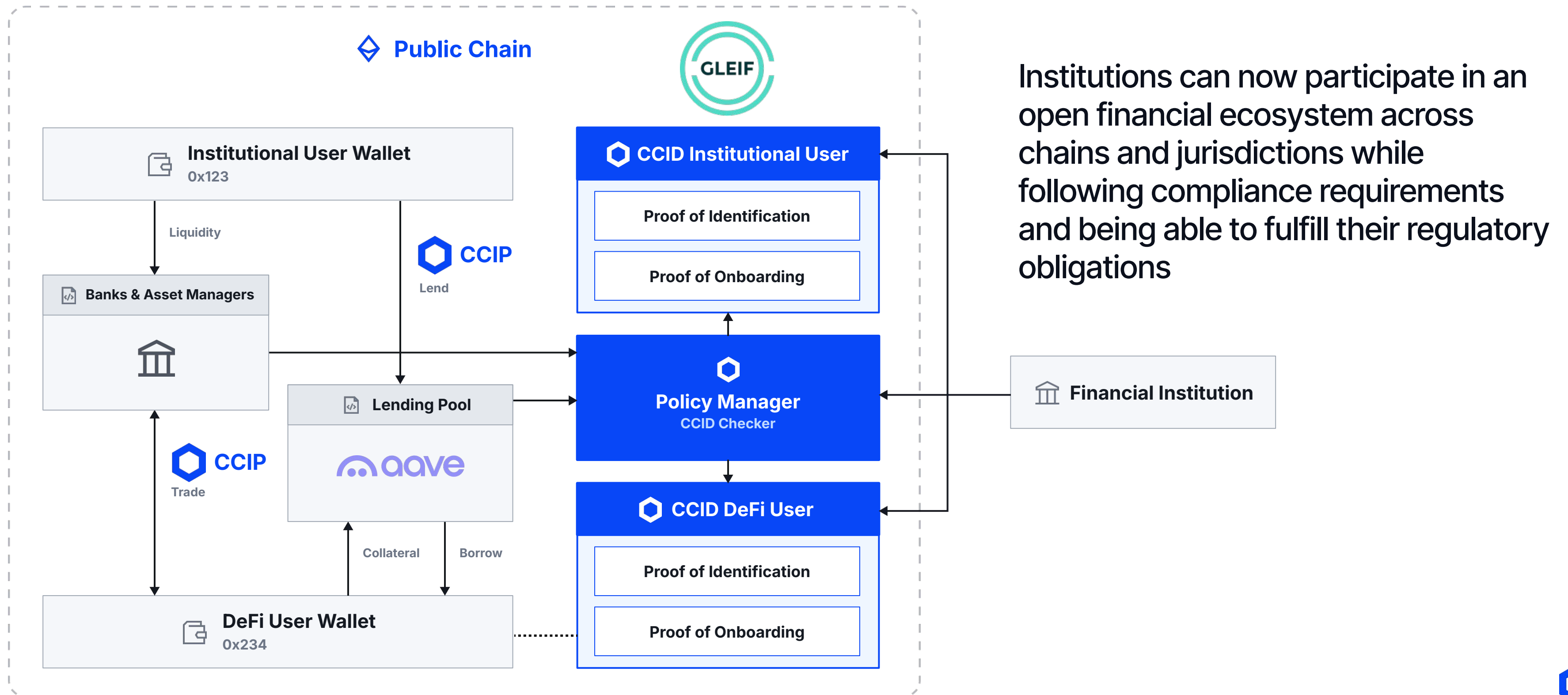


- ✓ Asset and jurisdiction-agnostic
- ✓ Modularity and composability design
- ✓ External policy connectivity
- ✓ Auditable transaction log



USE CASE

Enabling Cross-Chain Institutional to DeFi Transactions



Movement of Stablecoins to Users Across Various Chains via CCIP

OFFCHAIN



CHAINLINK RUNTIME ENVIRONMENT

Send stablecoins

CCIP

```
func ccipSend(config *Config, runtime cre.Runtime, evmConfig EvmConfig,
amount *big.Int, recipientAddress common.Address) (string, error) {
    logger := runtime.Logger()
    logger.Info("Calling ccipSend",
        "ccipContract", evmConfig.CcipContractAddress,
        "recipient", recipientAddress.Hex(),
        "amount", amount)

    evmClient := &evm.Client{
```

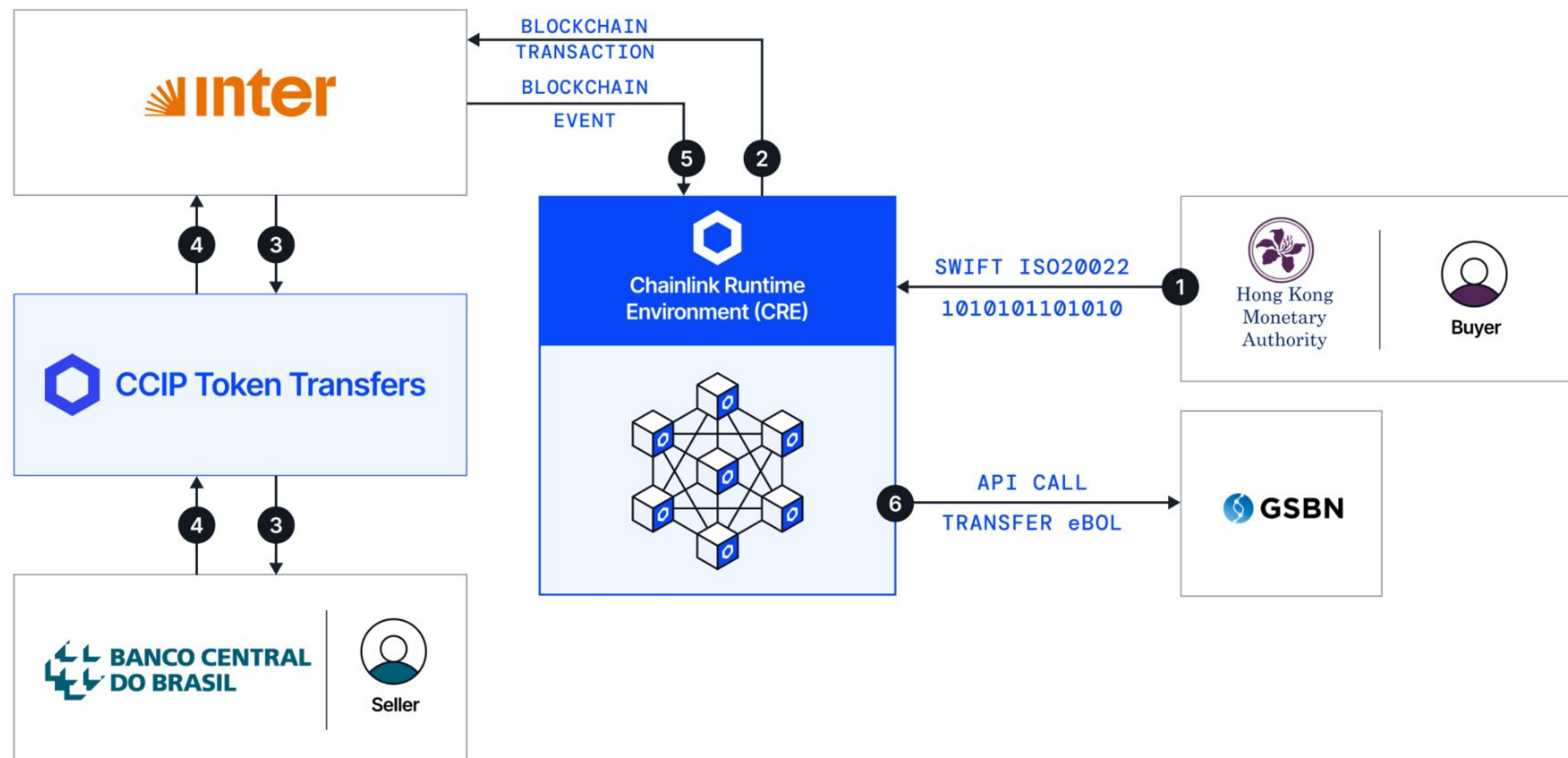
Track transfer

```
logTrigger := evm.LogTrigger(16015286601757825753, &evm.
FilterLogTriggerRequest{
    Addresses: [][]byte{
        common.HexToAddress("0x123...abc").Bytes(),
    },
    // This example filters for a Transfer event signature
    Topics: []*evm.TopicValues{
        {
            Values: [][]byte{
```

ONCHAIN



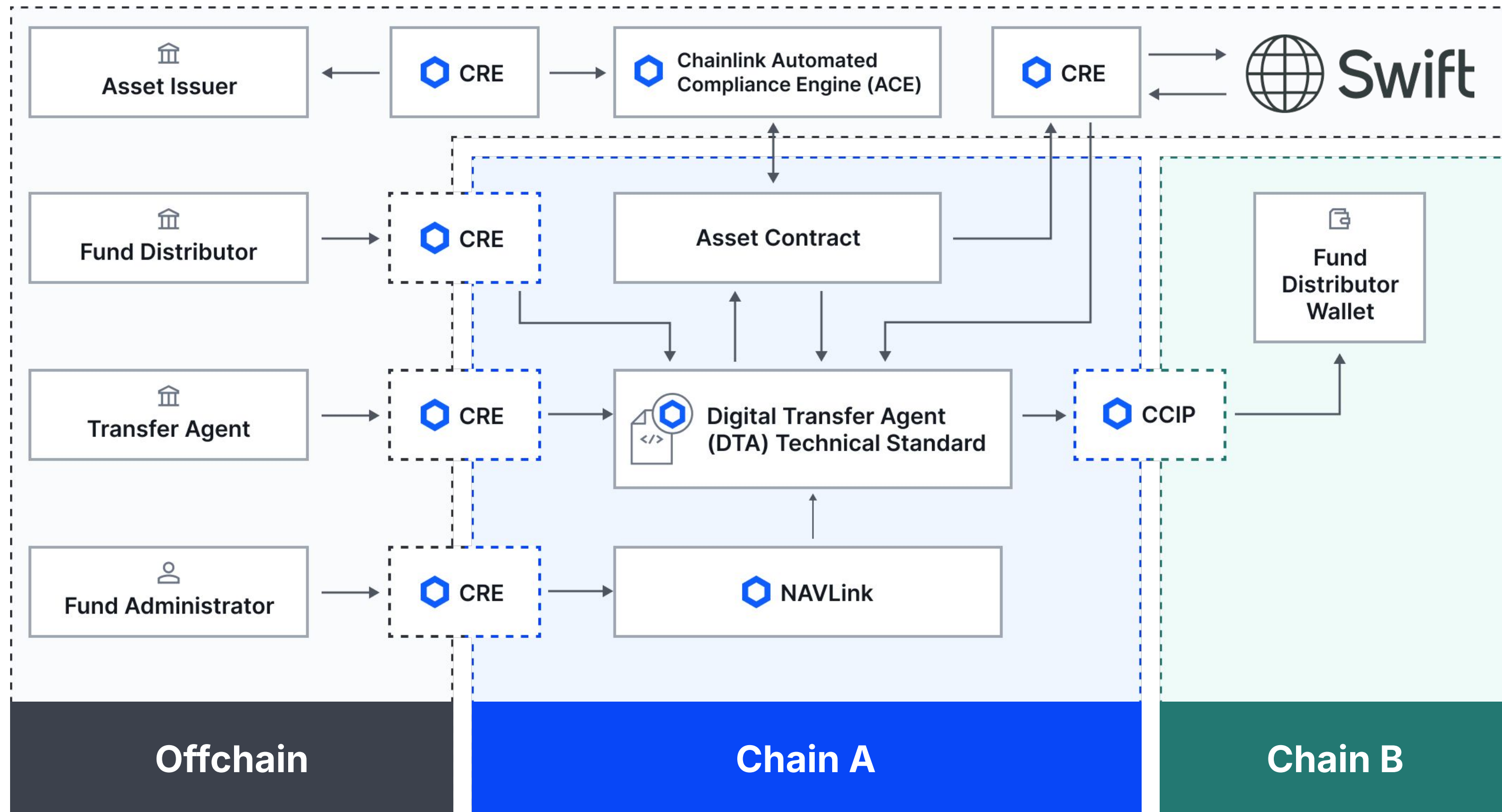
Central Bank of Brazil and HKMA Utilizing CRE and CCIP for Global Trade Flows



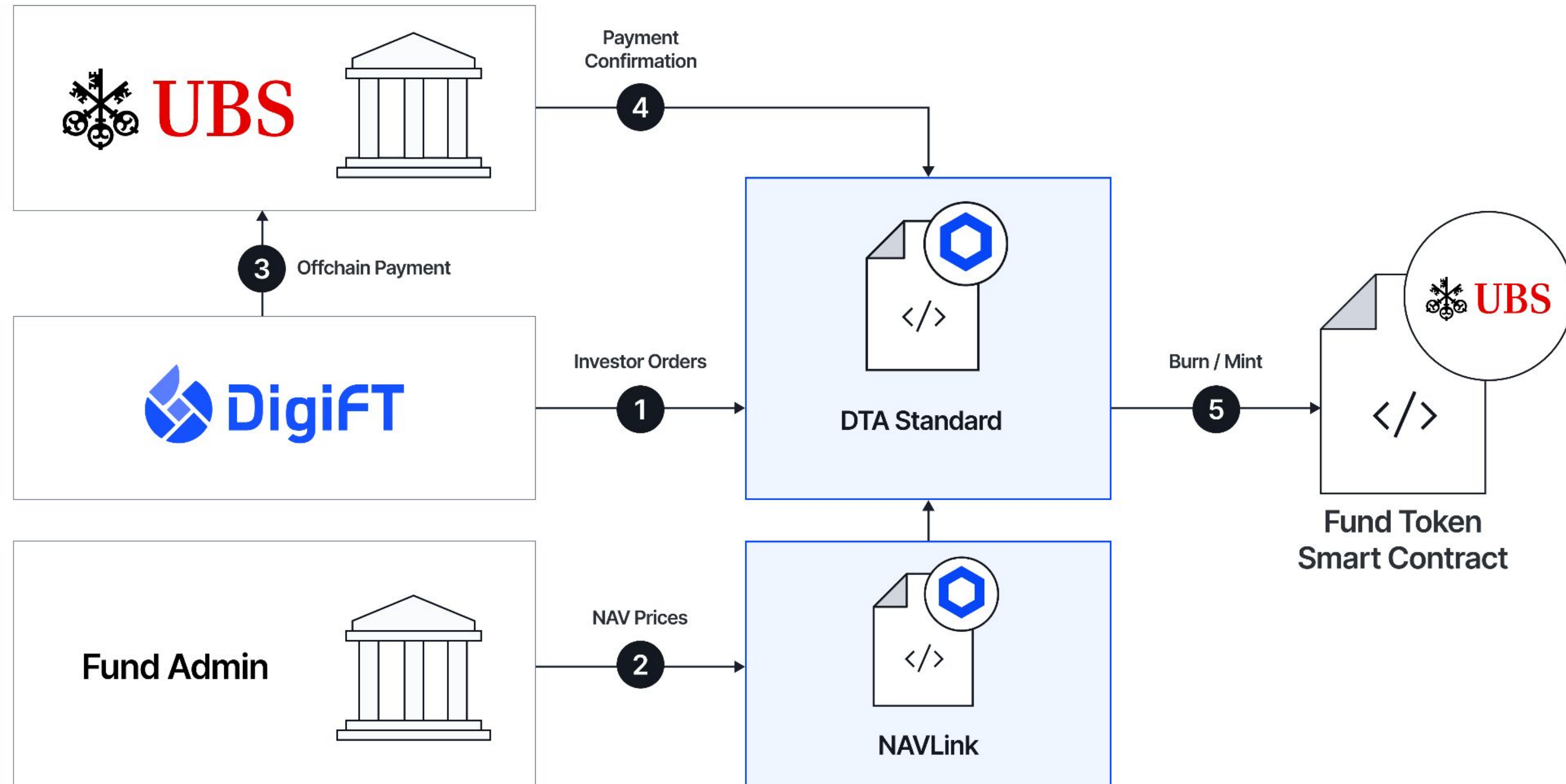
- 1** Initiate DvP
- 2** CRE forwards payment instruction to Inter Bank
- 3** Inter Bank forwards payment to Banco Central Do Brasil through CCIP
- 4** Banco Central Do Brasil forwards payment confirmation to Inter Bank through CCIP
- 5** Banco Central Do Brasil forwards payment confirmation to Inter Bank through CCIP
- 6** Transfer Electronic Bill of Lading



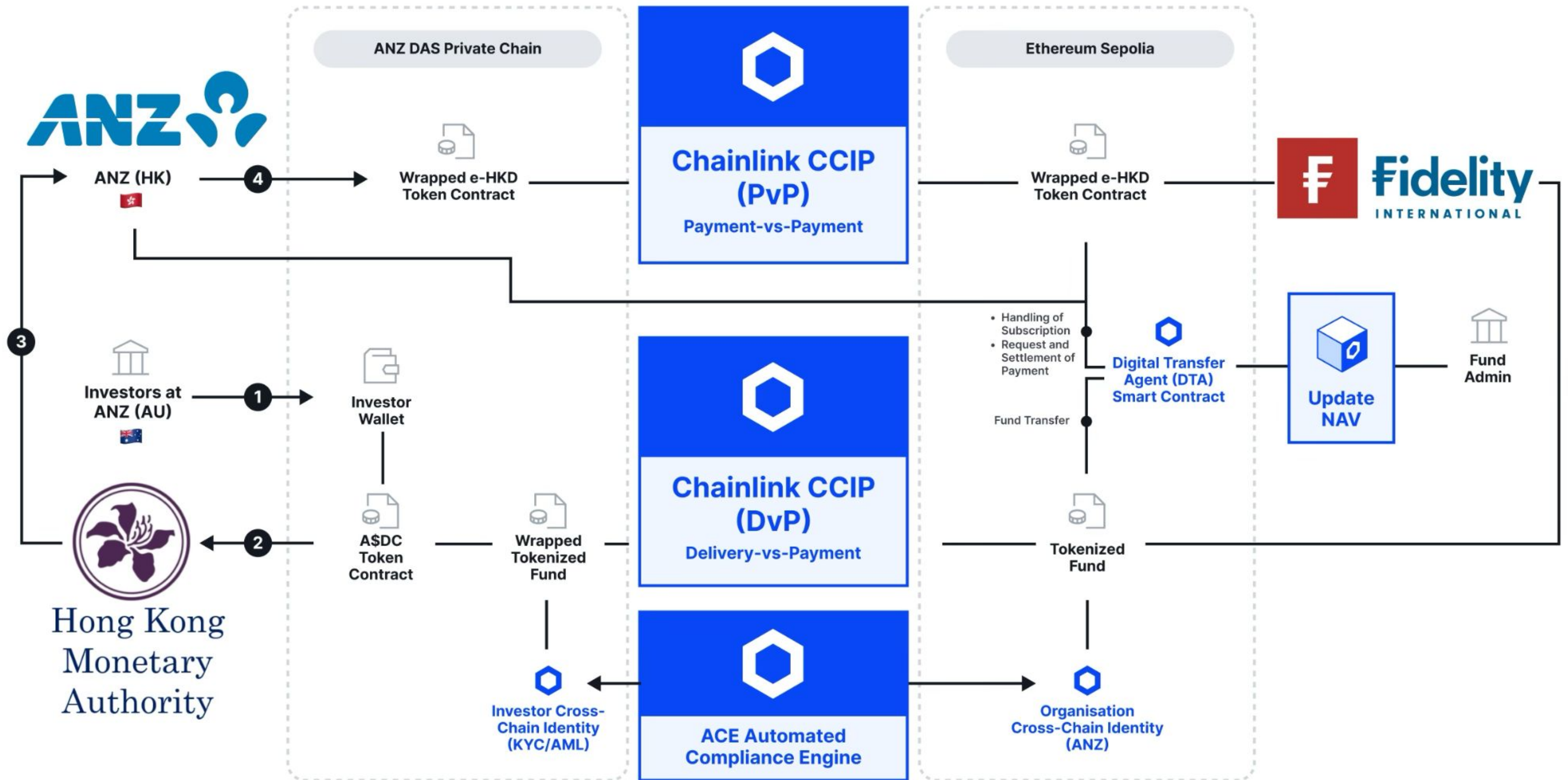
Streamlined Subscriptions and Redemptions Processing Across Transfer Agents, Blockchains and Swift Payments



UBS Tokenized Funds Using Chainlink Standards

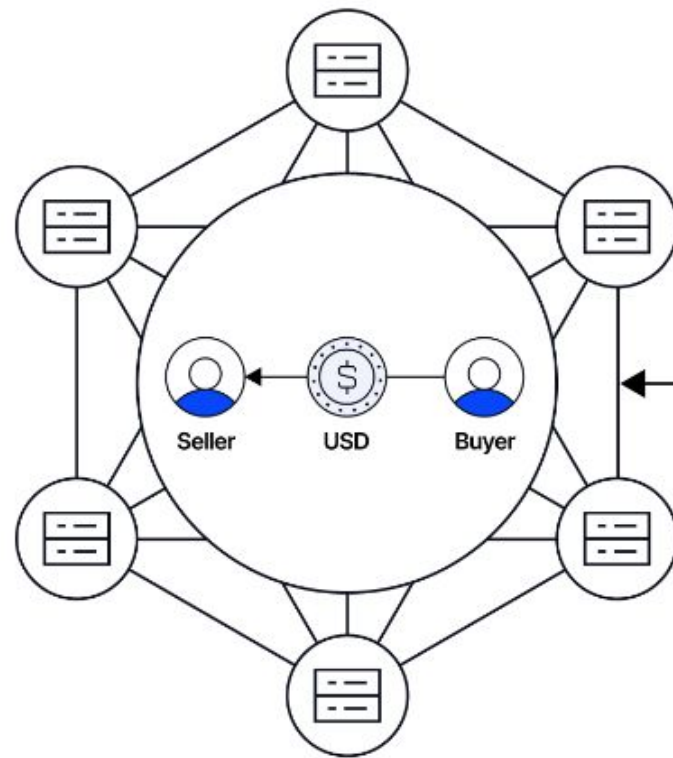


Fund Tokenization, Delivery of Assets Cross-Chain with Automated Compliance



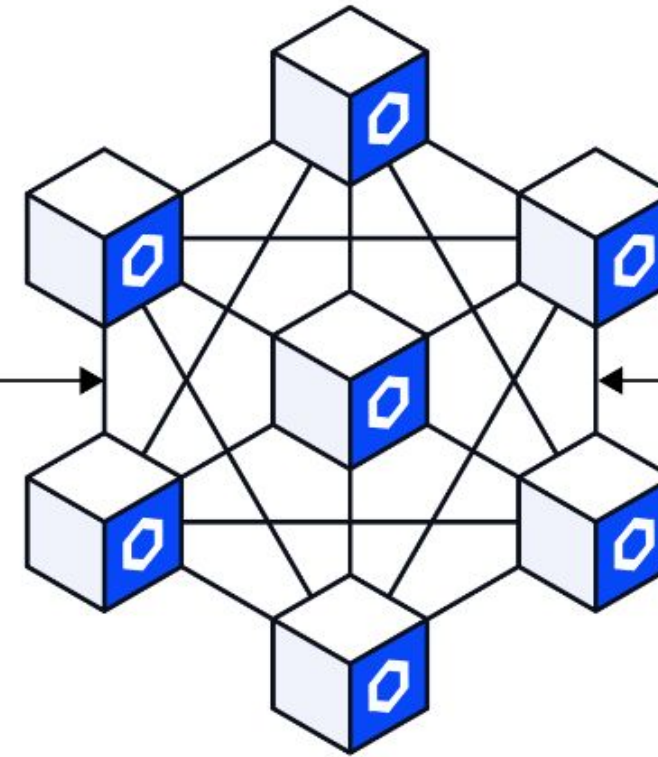
Private and Public Chains Interoperating via CRE

kinexys by J.P.Morgan



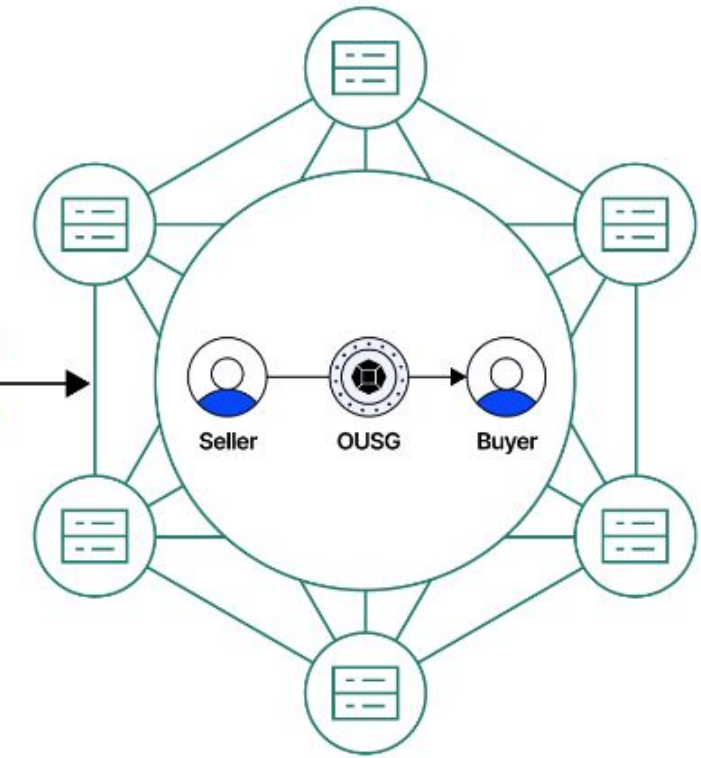
PRIVATE BLOCKCHAIN

 **Chainlink**



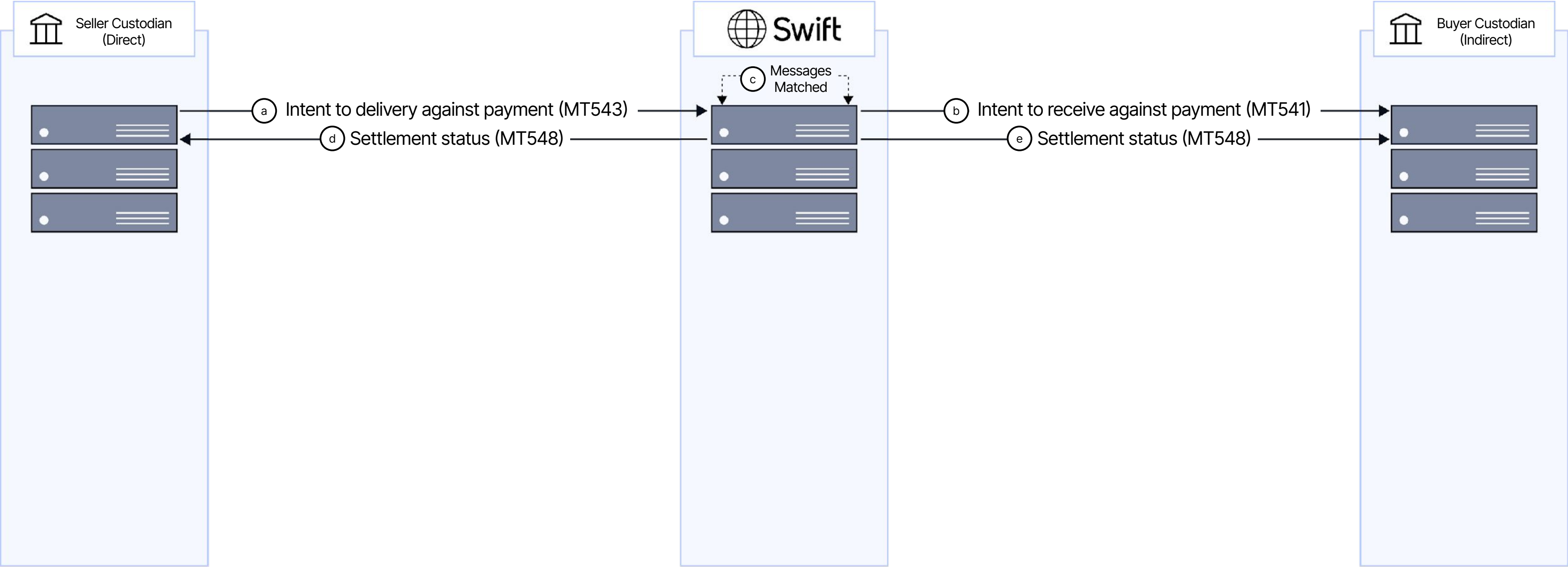
CHAINLINK RUNTIME ENVIRONMENT

 **Ondo Chain**

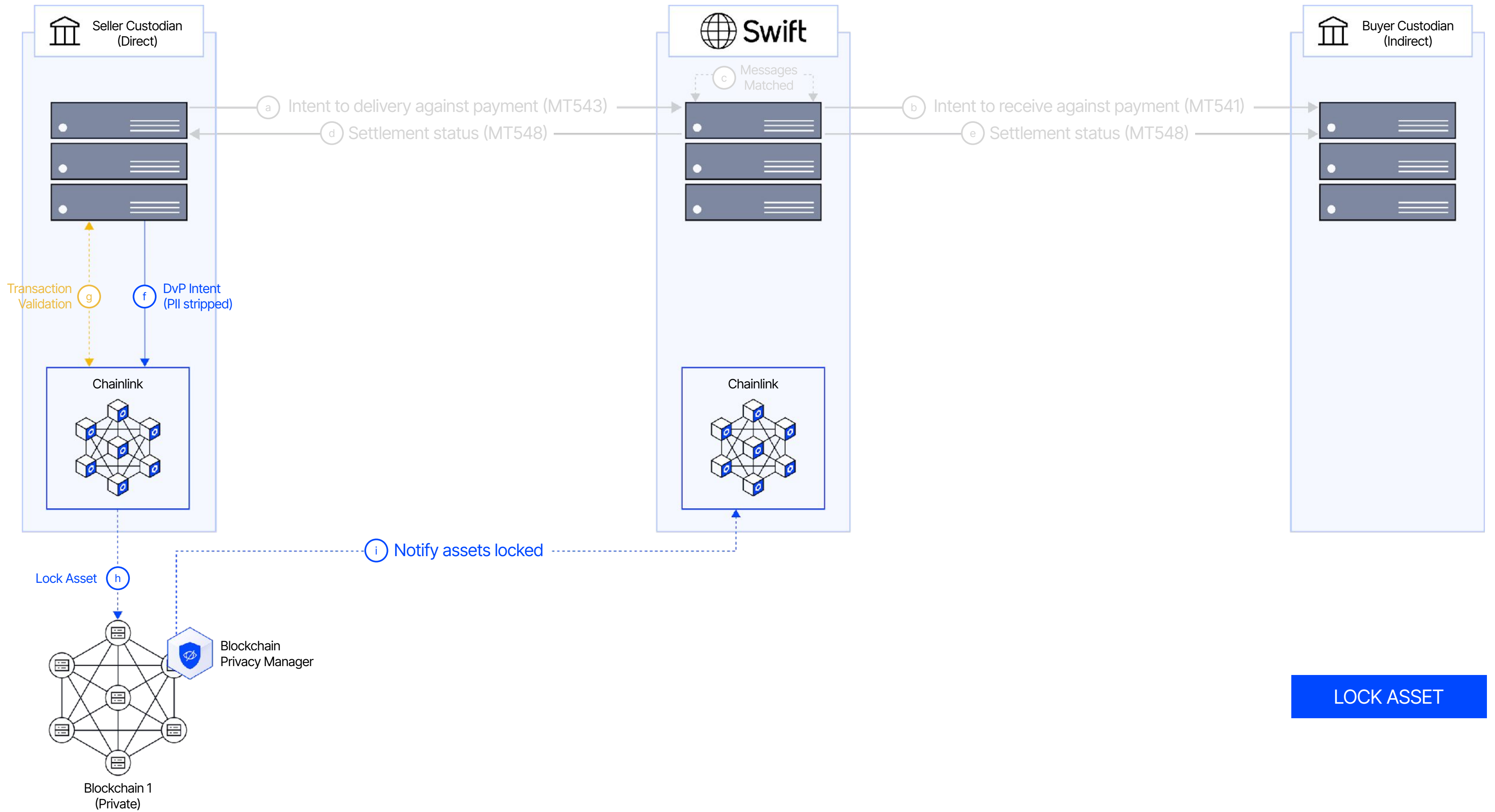


RWA BLOCKCHAIN





PRE SETTLEMENT





Esc

DvP

Direct to direct



Seller (YOU)

Custodian 1

DIRECT



Swift

Messaging Network



Buyer

Custodian 2

DIRECT

Pre Settlement ^

Settlement v

Lock Asset v

Seller's back office

Back Office

6:22:43 AM

Sent - Settlement instruction status (MT548)

Chainlink Platform

Chainlink

6:23:43 AM

Received - Settlement instruction status (MT548)

Chainlink

6:24:43 AM

Swift Message Transformation - PII removed

Chainlink

6:25:43 AM

Account Mapping - accounts:address

Chainlink | ONCHAIN

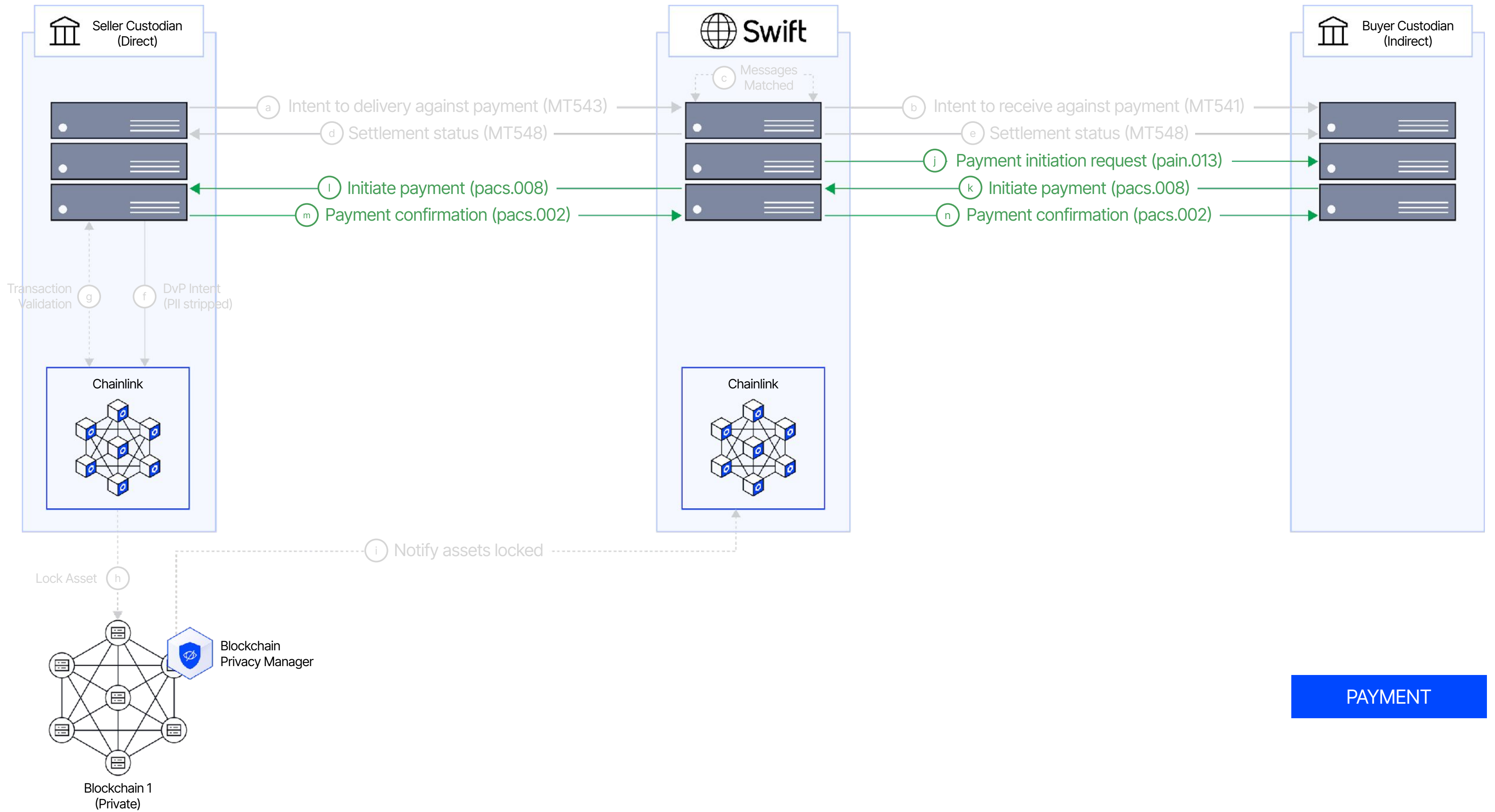
6:26:43 AM

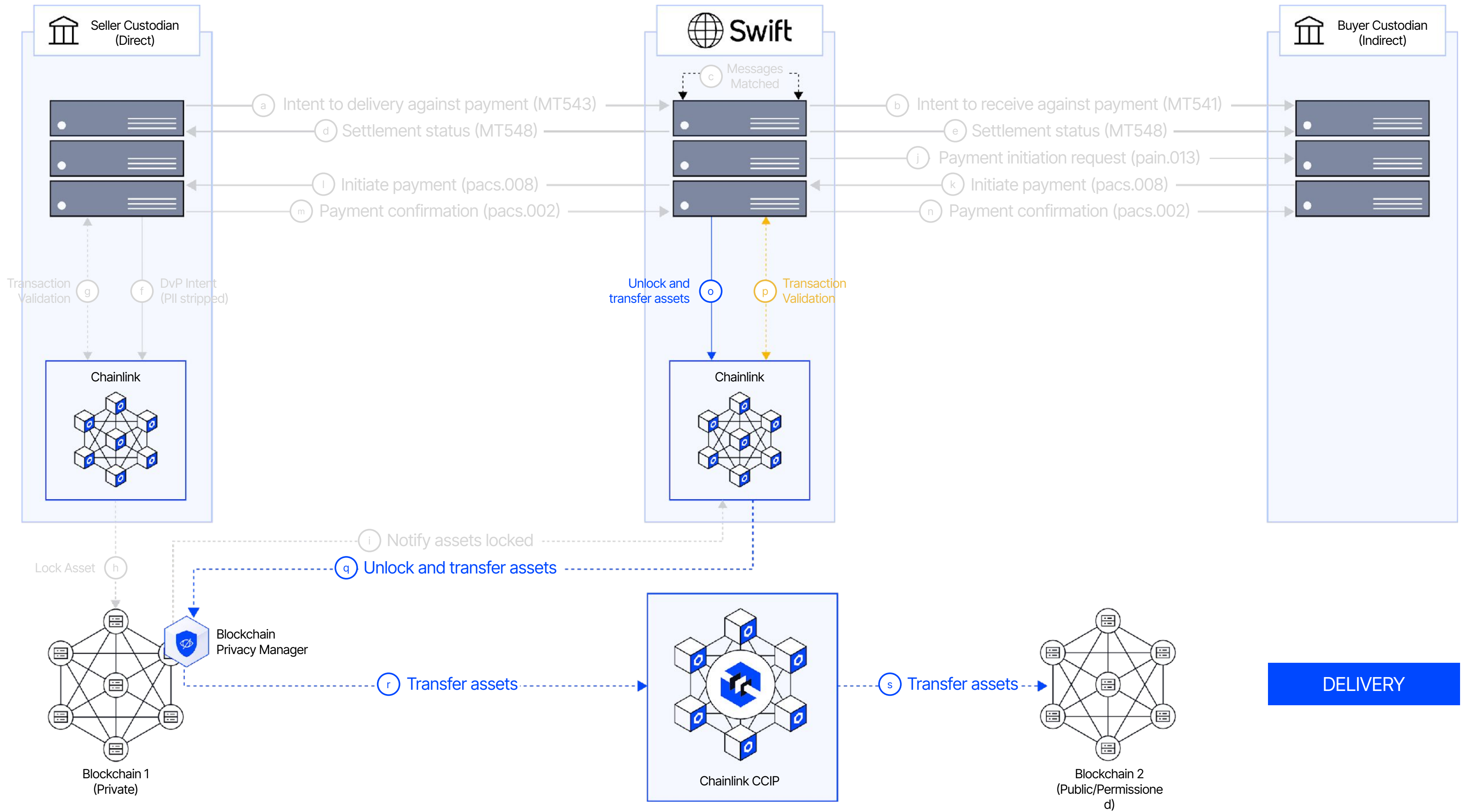
Blockchain Transaction(write) - Asset locked

Chainlink | ONCHAIN

6:27:43 AM

Blockchain Transaction(read) - Asset locked







Esc

DvP

Direct to direct



Seller (YOU)

Custodian 1

DIRECT



Swift

Messaging Network



Buyer

Custodian 2

DIRECT

Delivery ▾

Buyer's back office

Received - Payment confirmation (MT545)

Chainlink 6:48:43 AM
Swift Message Transformation - PII removed

Chainlink | ONCHAIN 6:49:43 AM
Blockchain Transaction(write) - Asset unlock & transfer

Chainlink | ONCHAIN 6:50:43 AM
Blockchain Transaction(read) - Asset delivered

Chainlink 6:51:43 AM
Sent - Receive against payment confirmation (MT545)

Back Office 6:52:43 AM

Blockchain Transaction(write) - Asset unlock & transfer

Chainlink | ONCHAIN

6:49:43 AM

▾ Hide details

NYPAA00



CUSTUS22



Seller BIC

CUSTUS11



Buyer Account

US2398746501234891



Seller Account

US2547893421987342



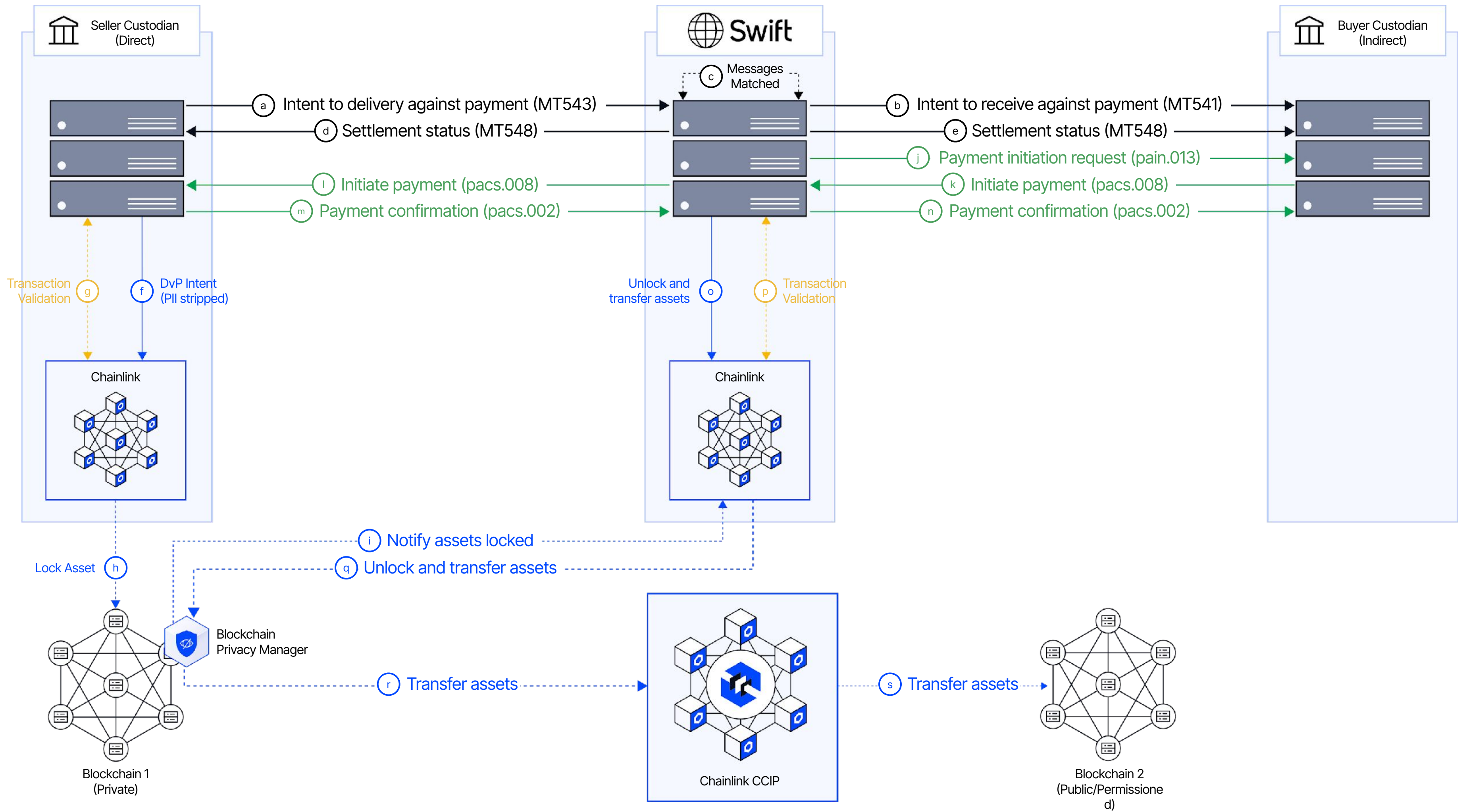
Global Tx ID | ONCHAIN

e56266d08f6eef254dbdd2b562e27b

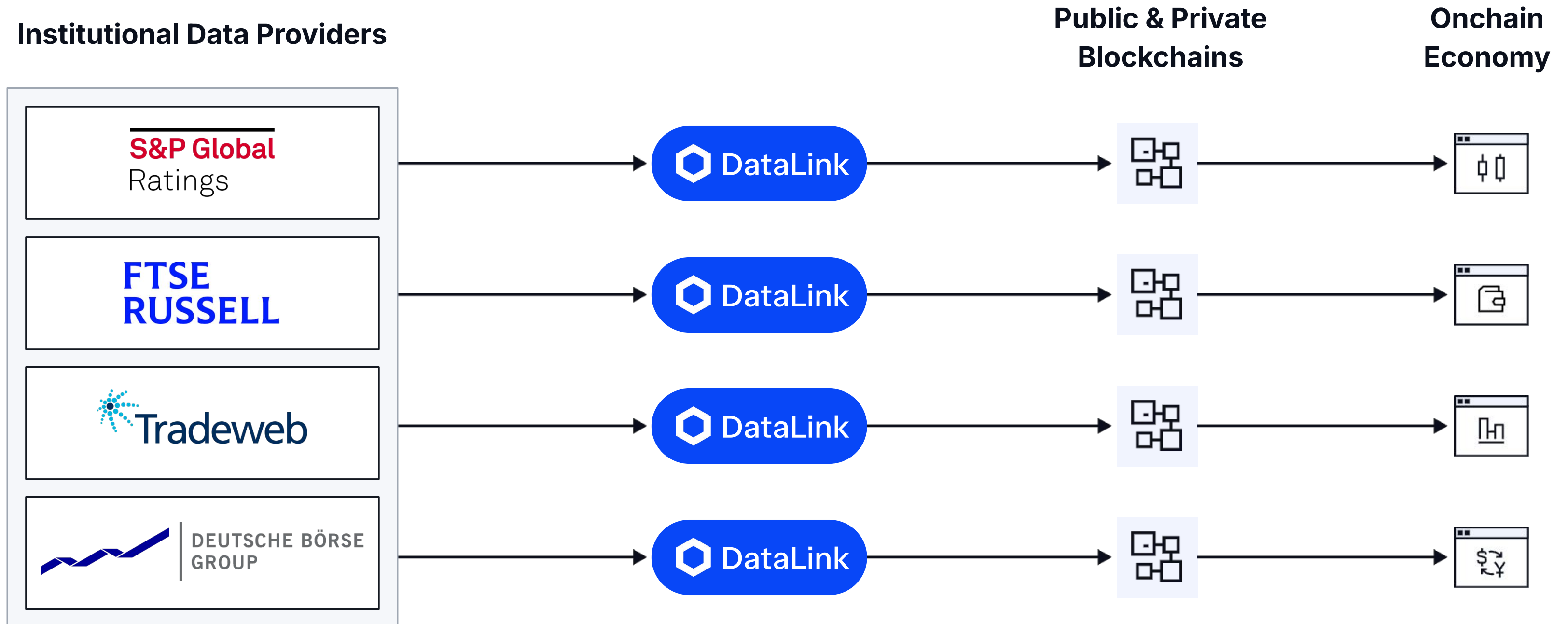


Raw Data

```
{
  "SettlementId": 124708829519055705578696096989777691754937990918196,
  "PartyInfo": {
    "BuyerSourceAddress": "0x93411f72dd3341a1d8af7765bd5baff70f18c521",
    "BuyerDestinationAddress": "0x93411f72dd3341a1d8af7765bd5baff70f18c521",
    "SellerSourceAddress": "0xb4299d7596529ff8df496e53ffd77944bcca3ae1"
```



DataLink is Now Putting Institutional Data On-chain



Orchestration Doesn't Need to Be Your Problem: How CRE Is Bringing Financial Institutions Onchain

Fullton Street Stage Day 2 → 2:00 - 2:14 PM



Aakar Schroff
VP of Product
Chainlink Labs

Build Your First Workflow With CRE



Developer Workshop Day 1 → 3:05 - 4:05 PM



Richard Gottleber
DevRel Content Manager
Chainlink Labs

How CRE Connects TradFi, DeFi, and Tokenized Assets

Grand Central Stage Day 2 → 4:00 - 4:25 PM

Moderator: **William Reilly**, Chainlink Labs
Participants: **Bruno Grossi**, Banco Inter | **Surendra Kalidindi**, Hadron by Tether | **Laszlo Szabo**, Kiln | **Cory Pugh**, Bridgetower Capital

Demo: Integrating AWS With Chainlink Runtime Environment (CRE) Workflows

Developer Workshop Day 1 → 4:05 - 4:35 PM



Simon Goldberg
Web3/Blockchain Specialist
Solutions Architect, AWS



Ricky Vuong
Account Manager
Amazon Web Services

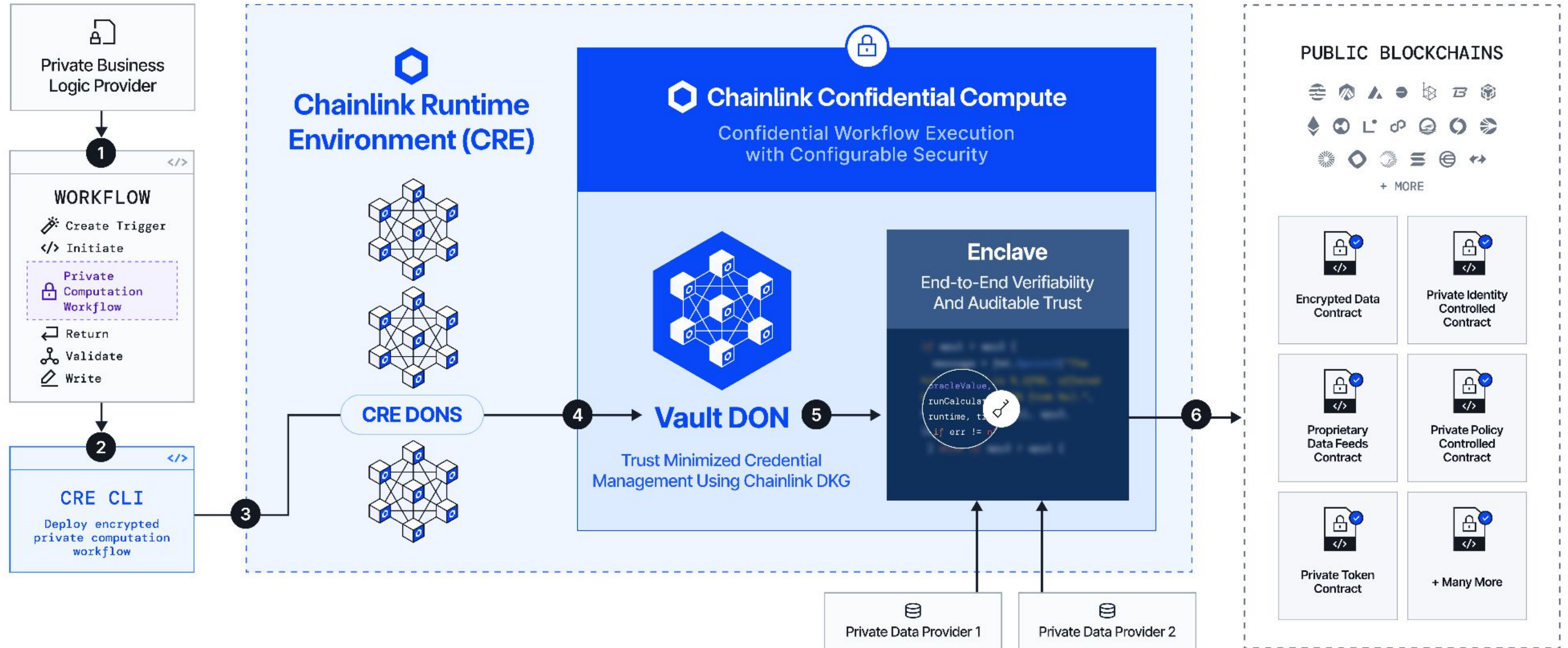


INTRODUCING CHAINLINK CONFIDENTIAL COMPUTE:

Unlocking Private Smart Contracts On Any Blockchain



Chainlink Confidential Compute Creates On-Chain Privacy



- 1** Write workflow including private capabilities
- 2** Encrypt private computation workflow and deploy with CRE CLI
- 3** Workflow execution initiated
- 4** Chainlink DKG setup enables generating privacy preserving threshold decryption shares of private workflow and data
- 5** TEE decrypts private workflow and data, initiates execution
- 6** Attestation and output validated by DONs and write output to chains



Chainlink Confidential Compute

Fulton Street Stage Day 2 → 3:30 - 3:44 PM



Gregory Neven

Research Engineer
Chainlink Labs

Fundamental Building Blocks for Onchain Finance

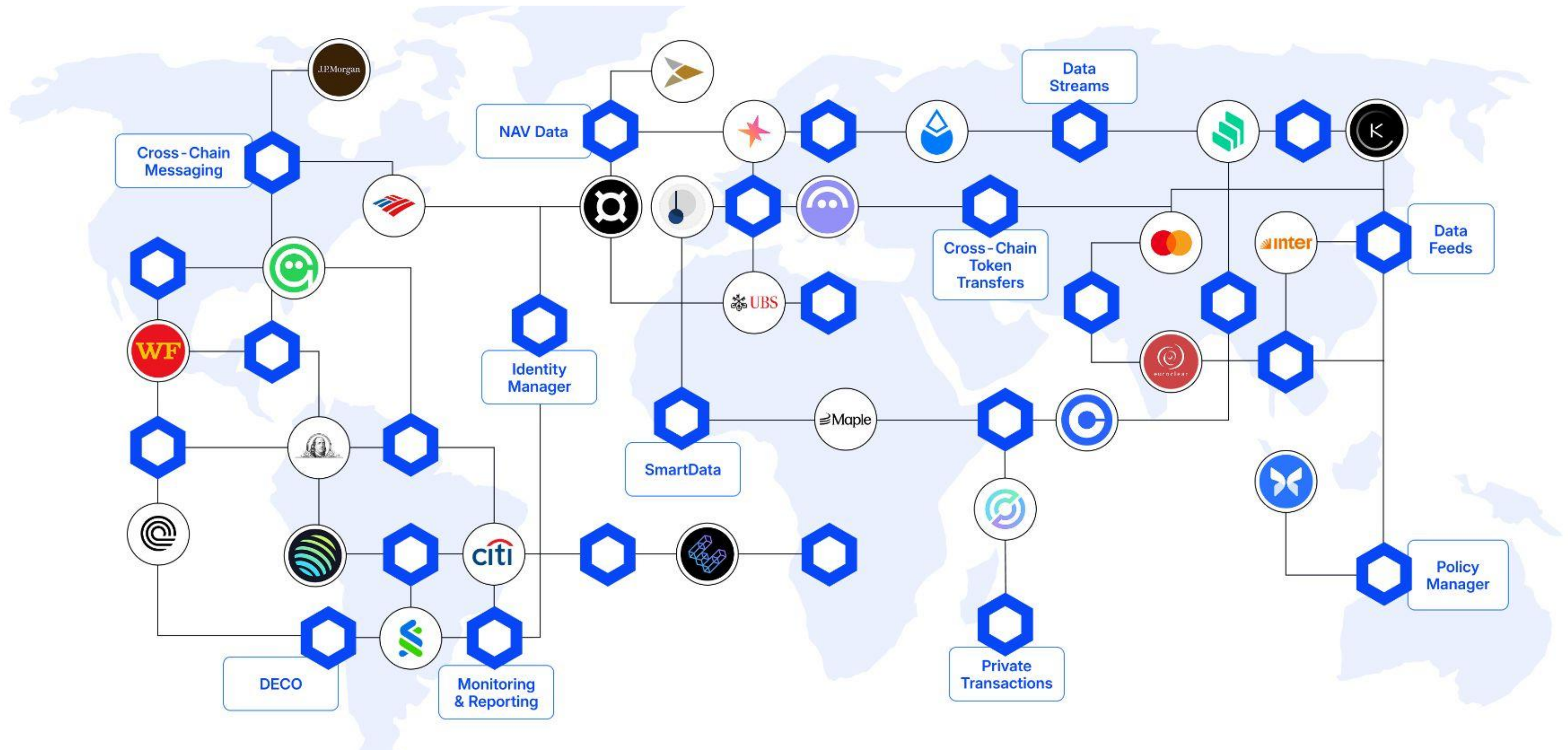
Grand Central Stage Day 2 → 4:40 - 5:00 PM



Lorenz Breidenbach

Head of Research
Chainlink Labs

The Chainlink Standard Enables Institutional Adoption



Chainlink Runtime Environment

Developer Workshop (Day 1) 3:05 – 4:05 PM
Build Your First Workflow With CRE

Developer Workshop (Day 1) 4:05 – 4:35 PM
Demo: Integrating AWS With Chainlink Runtime Environment (CRE) Workflows

Fulton Street Stage (Day 2) 2:00 – 2:14 PM
Orchestration Doesn't Need to Be Your Problem: How CRE Is Bringing Financial Institutions Onchain

Grand Central Stage (Day 2) 4:00 – 4:25 PM
How CRE Connects TradFi, DeFi, and Tokenized Assets

AI

Union Square State (Day 2) 1:45 – 2:00 PM
Props: Using Oracles For Machine-Learning Security

Confidential Compute

Fulton Street Stage (Day 2) 3:30 – 3:44 PM
Chainlink Confidential Compute

Grand Central Stage (Day 2) 4:40 – 5:00 PM
Research Keynote: Fundamental Building Blocks for Onchain Finance

Data

Penn Station Stage (Day 2) 9:30 – 10:00 AM
Unlocking Institutional Capital: The Data, Identity, and Regulation Imperative for DeFi

Union Square Stage (Day 2) 1:00 – 1:30 PM
Executive Perspectives: Architecting the Onchain Financial System

CCIP

Fulton Street Stage (Day 2) 10:30 – 10:44 AM
Connecting the Dots: Interoperability in the Tokenized Economy

Penn Station Stage (Day 2) 11:15 – 11:45 AM
The Future of Onchain Finance: Interoperability at Scale

Automated Compliance

Grand Central Stage (Day 1) 3:30 – 4:00 PM
Automating Compliance for Complex Transactions

Fulton Street Stage (Day 2) 2:30 – 2:44 PM
Compliance Is How You Win Onchain





Thank You

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