

T-Bridge Framework for Cross-Chain

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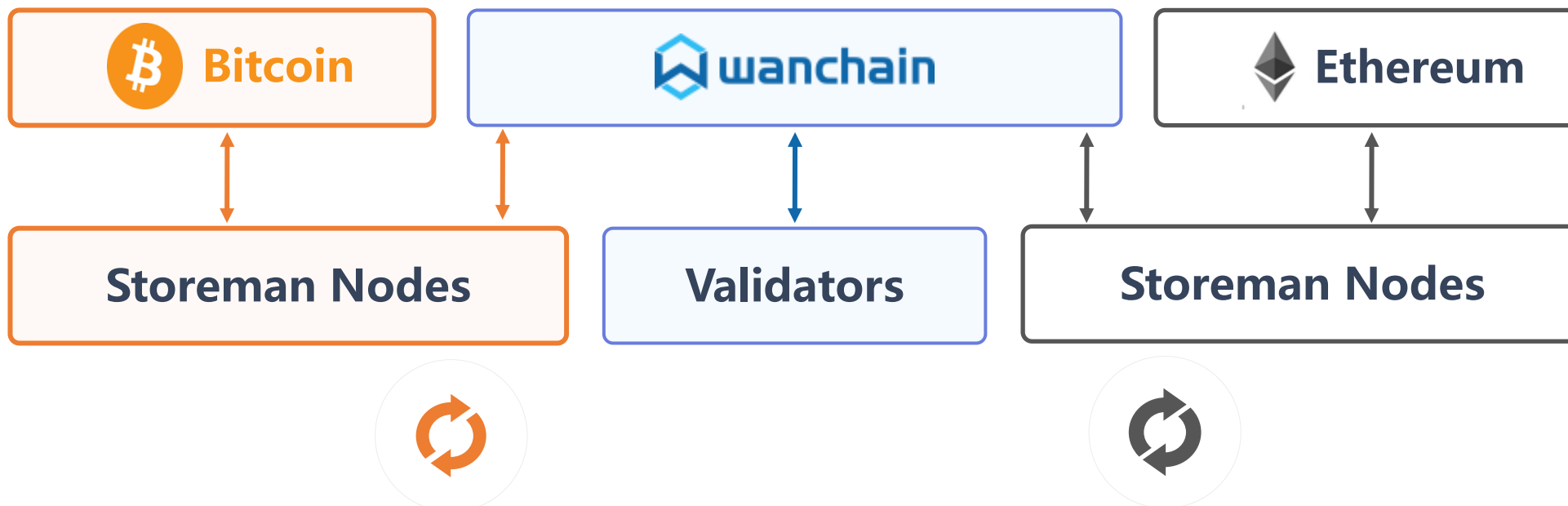
WANCHAIN

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Background: Decentralized Cross-chain Mechanism



Wanchain has provided decentralized cross-chain mechanism to bridge wanchain, ethereum and bitcoin blockchains etc.



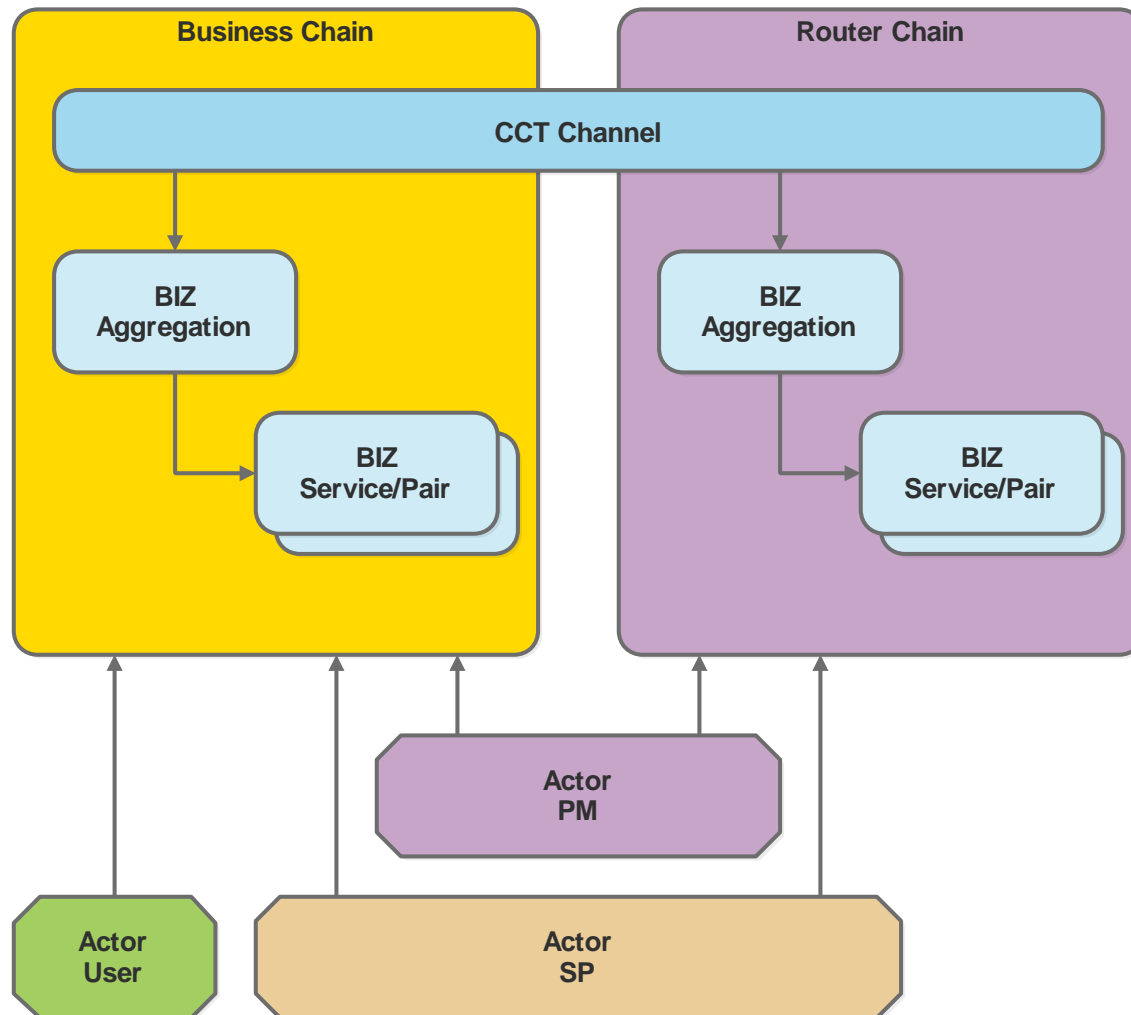
Evolution: T-Bridge Framework (Wanchain 4.0)



Wanchain has focused on supporting cross-chain interoperability between private and public blockchain by:

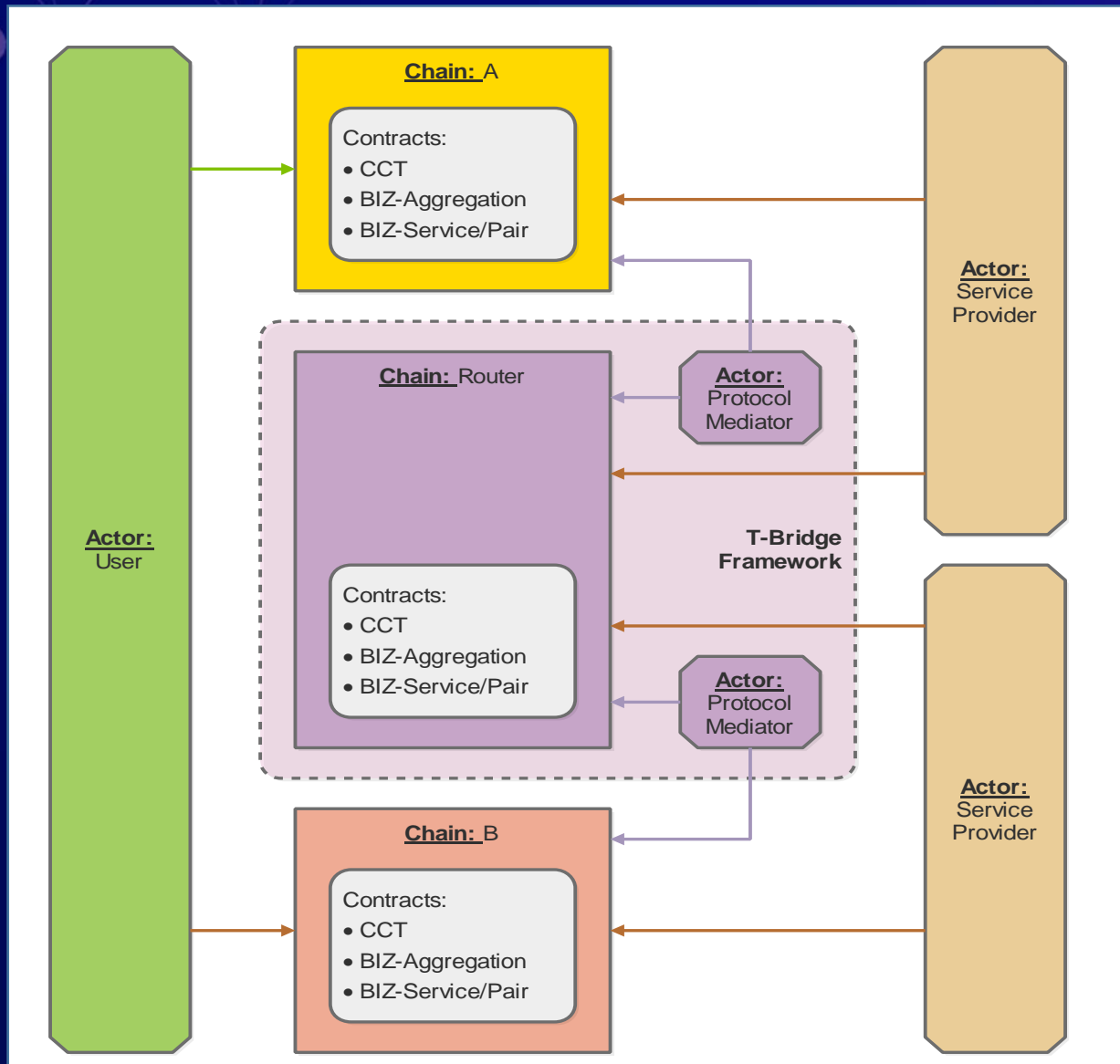
- **Generalized framework and reference architecture.**
- **Modular components and common protocols.**
- **Customized business-related cross-chain smart contracts and services.**

T-Bridge Concepts



- **Router Chain:** Router chain plays role for bridging CCT transactions among business chains within T-Bridge framework, which works as CCT hub.
- **Business Chain:** Business chains are involved in CCT transactions for providing related services or resources.
- **Actor PM (Protocol Mediator):** PM provides CCT mechanisms via T-Bridge framework, which monitors chains for aggregations and performs corresponding CCT requests.
- **Actor SP (Service Provider):** SP provides services or resources that are involved in CCT transactions.
- **Actor User:** User utilizes CCT transactions for exchange of CCT resources or services.
- **CCT Channel:** CCT Channel provides the T-Bridge framework with CCT registry mechanism, where variant CCT trust models are supported.
- **BIZ Aggregation:** BIZ Aggregation works as cascade and coordinator of CCT transactions for involved services or resources.
- **BIZ Service/Pair:** BIZ Service/Pair provides service and resource which are involved in CCT transactions.

T-Bridge Models



- For different scenarios or solutions, PM should be verified and trusted with flexible **CCT trust models**.
- Common CCT transactions could be identified and divided into three categories: StartCCT request, RouterProof request, and BizInvoke request. They are defined as **Interaction Protocol Models**.
- **Aggregation Process Models** are introduced to define and configure the cross-chain process steps to support variant scenarios.

T-Bridge Models and Contracts

CCT Trust Models

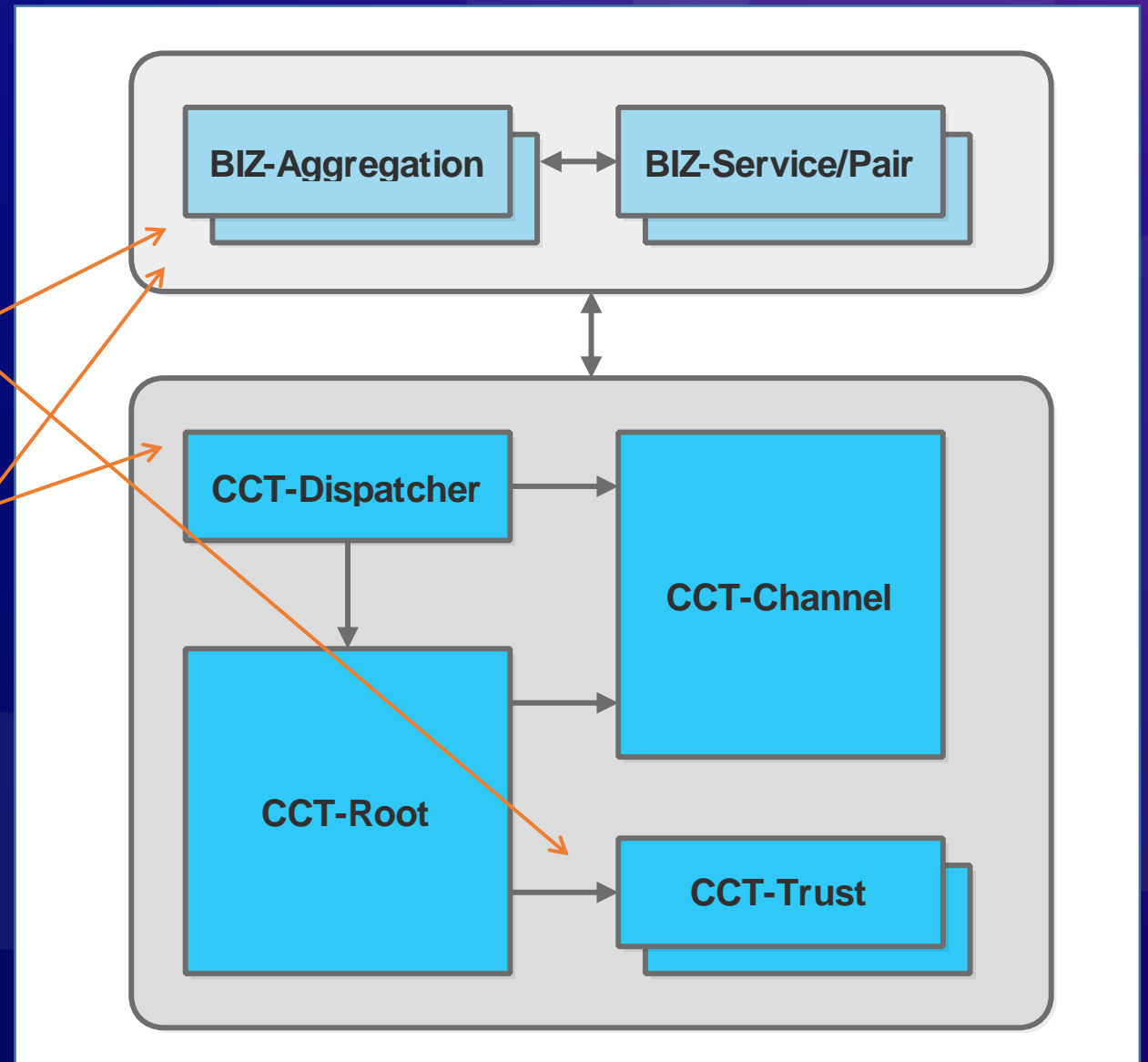
- Single Authority Sign Trust
- Multiple Federation Sign Trust

Interaction Protocol Models

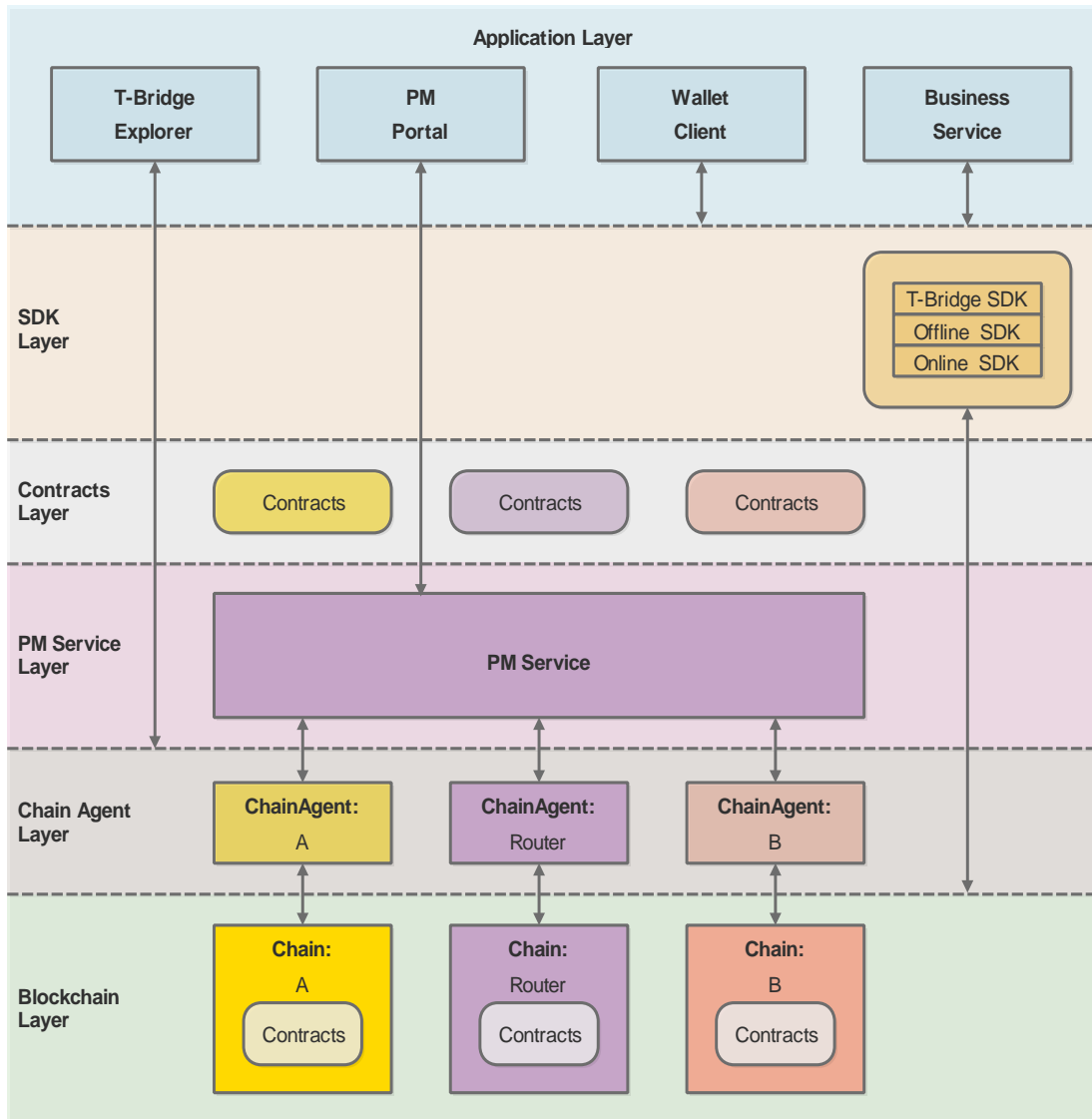
- StartCCT Request
- BizInvoke Request
- RouterProof Request

Aggregation Process Models

- State Machine Definition
- State Action Template



T-Bridge Reference Architecture and Stack



Layer	Description	Components
Application Layer	Application or business service with cross-chain capabilities for actors	T-Bridge Explorer PM Portal Wallet Client Business Service
SDK Layer	SDK for easy development with cross-chain capabilities	T-Bridge SDK Offline SDK Online SDK
Contracts Layer	CCT contracts and business contracts	CCT Contracts BIZ Contracts
PM Service Layer	PM service to monitor and perform counterpart transactions among blockchains.	PM Service
Chain Agent Layer	Chain agent for communicating with variant blockchain network	Chain Agent Service
Blockchain Layer	Multiple blockchain networks	Blockchain Node

THANKS!