

1. Project Description

XRPChange is a P2P bulletin board with collateral guarantees, leveraging the XRP Ledger to ensure secure transactions. The platform allows users to post offers for buying/selling cryptocurrency or fiat, overseeing transaction integrity using encrypted tokens with XRP reserves provided by sellers. XRPChange does not perform exchanges; it ensures security, deducts fees, and resolves disputes.

How It Works:

- Step 1: User Registration and AI KYC
 - Users register via the mobile app or website.
 - AI KYC verifies identities in 2-5 minutes using document scanning and biometrics (98% accuracy). For fiat transactions, extended verification with passport details and phone numbers is required.
- Step 2: Creating an Offer
 - A seller creates an offer for up to 80% of the reserve in their encrypted token (e.g., 10 satoshi for \$5.20).
 - The offer includes details: country, bank, bank account, and custom fields (payment purpose, contract, URL CallBack for notifications).
 - The seller provides an encrypted token with an XRP reserve as a transaction guarantee (not stored on the platform).
 - Offers are stored in ClickHouse for scalability and filtered by relevance (country, currency, bank).
 - Buyers can create trigger offers to receive notifications about matching offers for sale.
- Step 3: Initiating a Transaction
 - A buyer selects an offer (e.g., 10 satoshi for \$5.20) and contacts the seller.
 - For fiat-to-fiat deals, users can split the process into two stages (fiat-to-crypto, then crypto-to-fiat) by posting two offers. The platform suggests an optimal plan via API (e.g., which cryptocurrency to use).
- Step 4: Executing the Transaction
 - Users conduct the transaction outside the platform (e.g., bank transfer for fiat, wallet transfer for crypto).
 - For fiat transactions, the buyer confirms payment via the app, and the seller confirms receipt. For crypto, payments are verified automatically via wallets.
 - XRPChange verifies the transfer (crypto via wallets, fiat via confirmations).
 - The XRP reserve in the seller's token is used to deduct the 0.5% fee and resolve disputes (compensation after 24 hours).
 - Platform fee: 0.5%, XRP Ledger fee: ~\$0.0002 (for token operations).
- Step 5: Completion and Transparency
 - Users receive notifications upon completion: seconds for crypto, minutes for fiat.
 - Total time: ~3-5 seconds for crypto, ~10-15 minutes for fiat.

Example Scenarios:

- Scenario 1: Fiat-to-Fiat (Cross-Border)
 - User A (Germany) sends €1,000 to User B (Japan) as ¥150,000.
 - Stage 1: User A buys 0.016 BTC for €1,000, User C (seller) provides an XRP-backed token. Time: ~10 minutes (SEPA).
 - Stage 2: User A sells 0.016 BTC for ¥150,000, User B pays ¥149,250 (after 0.5% fee). Time: ~5 minutes.
 - Total: ~10-15 minutes, fees: ~0.5% + \$0.0004.
 - Scenario 2: Crypto-to-Crypto
 - User A (USA) offers 1 BTC for ~20 ETH.
 - Users exchange outside the platform; XRPChange verifies via wallets.
 - Total: ~3-5 seconds, fees: ~0.5%.
 - Scenario 3: Fiat-to-Crypto
 - User A (France) buys 1,250 XRP for €500.
 - Total: ~10-15 minutes, fees: ~0.5% + \$0.0002.
 - Scenario 4: Crypto-to-Fiat
 - User A (Japan) sells 1,000 XRP for ¥60,000.
 - Total: ~10-15 minutes, fees: ~0.5% + \$0.0002.
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2. Technical Architecture

- Blockchain: XRP Ledger secures operations with collateral tokens.
 - Collateral Tokens: Encrypted tokens (XRP-based) with seller's wallet info and fee rules, provided by the seller, decrypted on the fly.
 - Offers: Stored in ClickHouse, with filters (country, bank, currency) and trigger offer support.
 - AI KYC: ML model with API integration for document/biometric verification (2-5 minutes, 98% accuracy). Extended verification for fiat transactions.
 - Backend: AWS servers, XRP Ledger nodes for synchronization. SSH access restricted to three fixed IPs.
 - Open API: Client apps (mobile, web) interact via an open API, including transaction plan analysis for fiat-to-fiat deals.
 - Frontend: Mobile app (iOS/Android) and web version, built on the open API with user-friendly UI/UX.
 - Transaction Verification: Automated for crypto via wallets, queued for fiat, compensation after 24 hours.
 - Security:
 - AES-256 encryption.
 - Multi-factor authentication (MFA).
 - Security audit (planned for Q3 2025).
 - API Security: Rate limiting, OAuth 2.0, API key management.
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3. Competitive Advantages

- Bulletin Board: Users conduct transactions; the platform ensures security via collateral tokens.
 - Open API: Enables third-party integrations, unlike closed systems.
 - Speed: Seconds for verification vs. minutes on other platforms.
 - KYC: AI-based, minutes vs. hours for manual verification.
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4. Technical Risks and Mitigation

- Technical Risks: Server failures, API vulnerabilities, blockchain sync issues.
 - Mitigation: Security audit, server stress testing, API audit, redundant XRP Ledger nodes.
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5. Glossary

- P2P (Peer-to-Peer): Direct exchange between users without intermediaries.
- XRP Escrow: XRP Ledger feature for collateral token operations.
- Open API: Publicly accessible API for third-party integrations.