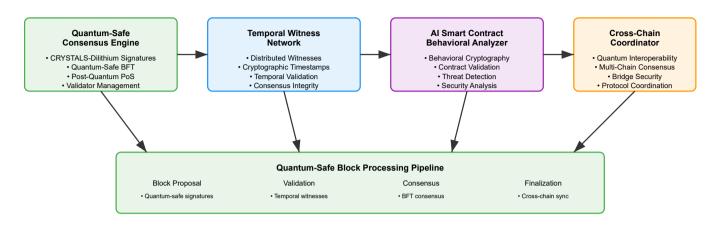
# QUANTUM SAFE BLOCKCHAIN CONSENSUS WITH TEMPORAL WITNESS NETWORKS

Application Number: [TO BE ASSIGNED] • Filing Date: September 4, 2025 • Inventor: [INVENTOR NAME]

TECHNICAL DRAWINGS AND FIGURES

### FIGURE 1: QUANTUM-SAFE BLOCKCHAIN SYSTEM ARCHITECTURE

FIGURE 1: Quantum-Safe Blockchain Consensus System Architecture



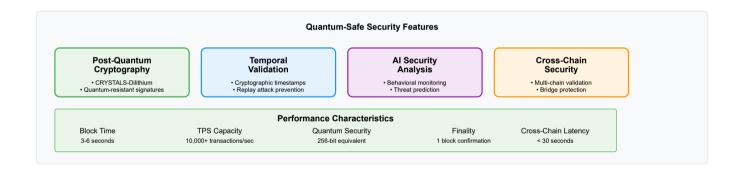


Figure 1 presents the comprehensive quantum-safe blockchain system architecture implementing temporal witness networks for distributed consensus validation. The system provides quantum-resistant security while maintaining blockchain performance and scalability.

## FIGURE 2: TEMPORAL WITNESS NETWORK AND CONSENSUS VALIDATION

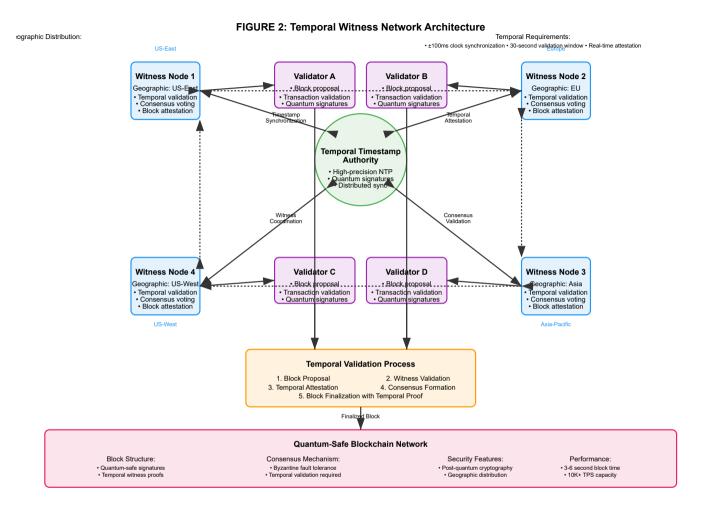


Figure 2 demonstrates the temporal witness network mechanism that provides quantum-resistant consensus validation through distributed time-based verification and cryptographic witness attestation.

# FIGURE 3: AI-POWERED SMART CONTRACT SECURITY ANALYSIS

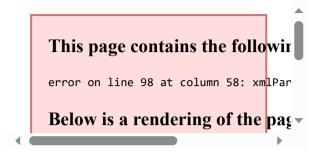


Figure 3 illustrates the advanced AI-powered smart contract security analysis system that detects quantum vulnerabilities and potential exploitation vectors in blockchain smart contracts before deployment.

# FIGURE 4: QUANTUM-SAFE CROSS-CHAIN INTEROPERABILITY

#### FIGURE 4: Cross-Chain Quantum Interoperability Architecture

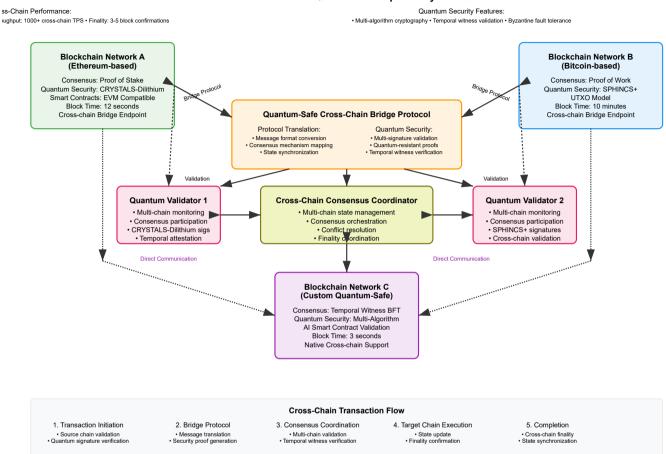


Figure 4 shows the quantum-safe cross-chain interoperability framework enabling secure communication between multiple blockchain networks while maintaining temporal witness validation across all chains.

## FIGURE 5: QUANTUM-RESISTANT CONSENSUS PROCESS FLOW

nsensus Performance: 1 block • Throughput: 10,000+ TPS • Fault tolerance: 33% Step 3: Temporal Step 4: Al Contract Step 1: Transaction Step 2: Block Initiation Witness Validation Analysis Proposal · Validator creates block · Behavioral validation · User submits transaction · Timestamp verification · Quantum-safe signature · Transaction bundling · Witness node attestation · Security assessment Initial validation CRYSTALS-Dilithium sig · Temporal consistency Threat detection Consensus Decision Byzantine Agreement Reject Block Insufficient votes
Return to Step 2 Validator A Validator B Validator C Validator D Validator E Vote: ACCEPT Vote: ACCEPT · Vote: REJECT Vote: ACCEPT Vote: ACCEPT Stake: 1000 tokens Stake: 1500 tokens Stake: 800 tokens Stake: 1200 tokens Stake: 900 tokens Vote Collectio Step 5: Block Finalization Consensus AchieveBlock Commitment: · 80% validator approv@uantum-safe signatures 4600/5400 stake weight • State root update
Temporal witness consensu£hain progression **Quantum-Safe Cryptographic Operations CRYSTALS-Dilithium SPHINCS+ Signatures Temporal Witnesses Byzantine Tolerance** • 33% fault tolerance · Lattice-based signatures · Stateless signatures · Time-locked commitments NIST Level 3 security · Geographic distribution Quantum-safe BFT

FIGURE 5: Quantum-Safe Consensus Process Flow

Figure 5 presents the detailed quantum-resistant consensus process flow implementing temporal witness validation, Byzantine fault tolerance, and quantum-safe cryptographic primitives for blockchain security.