

Dilithion: A Post-Quantum Cryptocurrency

Version 1.0

October 2025 Launch Date: January 1, 2026

Abstract

Dilithion is a decentralized cryptocurrency designed from the ground up for the post-quantum era. As quantum computers advance toward breaking classical cryptographic systems like ECDSA and RSA, the need for quantum-resistant blockchain technology becomes critical. Dilithion addresses this threat by implementing CRYSTALS-Dilithium, a NIST-standardized post-quantum digital signature scheme, combined with RandomX proof-of-work for ASIC-resistant CPU mining.

This whitepaper presents Dilithion's technical architecture, consensus parameters optimized for large post-quantum signatures, economic model, and roadmap for sustainable decentralized currency in the quantum age.

Key Features:

- **Post-quantum security:** CRYSTALS-Dilithium (NIST FIPS 204)
 - **ASIC-resistant mining:** RandomX proof-of-work
 - **Optimized consensus:** 4-minute blocks for large signature propagation
 - **Fair distribution:** No premine, pure proof-of-work launch
 - **Fixed supply:** 21 million coins
 - **Launch:** January 1, 2026, 00:00:00 UTC
-

Important Disclosure

Experimental Nature: Dilithion is an experimental cryptocurrency project. This software has NOT been professionally audited and may contain bugs or vulnerabilities. Use at your own risk. **AI-Assisted Development:** This project was developed with AI assistance (Anthropic's Claude Code). While AI tools enable rapid development and comprehensive documentation, all code requires careful human review and community scrutiny. We believe in full transparency about our development methods. **No Guarantees:** This project comes with no guarantee of success, security, or value. Users assume all risks. This is not financial advice. Do your own research (DYOR) before participating.

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1. Introduction: The Quantum Threat

1.1 The Problem

Modern cryptocurrency security relies on classical cryptography:

- **ECDSA (Bitcoin, Ethereum):** Elliptic Curve Digital Signature Algorithm
- **RSA:** Rivest-Shamir-Adleman encryption
- **SHA-256:** Secure Hash Algorithm (for mining) **Shor's Algorithm** (1994) demonstrated that quantum computers can break ECDSA and RSA in polynomial time. While SHA-256 mining receives only a modest speedup (Grover's algorithm), **digital signatures are critically vulnerable.**

1.2 Timeline to Quantum Threat

Current State (2025):

- IBM: 1,121-qubit quantum computer (Condor)
- Google: Quantum supremacy claimed
- China: Pan-Jianwei's quantum network **Expert Estimates:**
- **2030-2035:** Cryptographically relevant quantum computers (CRQC)
- **Breaking Bitcoin:** Estimated 1,500-3,000 logical qubits required
- **Current trajectory:** Doubling qubits every ~2 years **Conclusion:** Cryptocurrencies must transition to post-quantum cryptography **now** to remain secure over their multi-decade lifespan.

1.3 Existing Cryptocurrency Vulnerability

| Cryptocurrency | Signature Scheme | Quantum Vulnerable? | Migration Plan? |
|----------------|------------------|---------------------|---------------------|
| Bitcoin | ECDSA | Yes | None announced |
| Ethereum | ECDSA | Yes | Research phase only |
| Litecoin | ECDSA | Yes | None announced |

| Monero | EdDSA |  Yes | None announced |

| **Dilithion** | **Dilithium3** |  No | **Built-in from genesis** |

Critical Issue: Retrofitting existing blockchains with post-quantum cryptography requires:

- Hard fork (community consensus required)
 - Wallet migrations (user action required)
 - Backward compatibility challenges
 - Risk of botched transition **Dilithion's Solution:** Start with post-quantum cryptography from genesis block.
-

2. Post-Quantum Cryptography

2.1 CRYSTALS-Dilithium

Selection Process:

- NIST Post-Quantum Cryptography Standardization (2016-2024)
- 82 initial submissions
- Multiple rounds of evaluation
- **Winner:** CRYSTALS-Dilithium (2022)

Standardized: FIPS 204 (August 2024) Why Dilithium?

- **Security:** Based on hard lattice problems (Module-LWE, Module-SIS)
- **Performance:** Fast signing and verification
- **Standardization:** Official NIST standard
- **Analysis:** Years of public cryptanalysis, no serious breaks

Versatility: Three security levels (Dilithium2, 3, 5) **Dilithion uses Dilithium3:**

- **Security level:** NIST Level 3 (equivalent to AES-192)
- **Public key size:** 1,952 bytes
- **Signature size:** 3,309 bytes
- **Signing speed:** ~1-2 milliseconds
- **Verification speed:** ~1 millisecond

2.2 Comparison to Classical Cryptography

| Metric | ECDSA (secp256k1) | Dilithium3 | Ratio |
|----------------------|--|---|--------------------|
| | ----- | ----- | ----- |
| Public key | 33 bytes | 1,952 bytes | 59x larger |
| Signature | 72 bytes | 3,309 bytes | 46x larger |
| Security | ~128-bit | 192-bit (quantum-safe) | More secure |
| Signing time | <1 ms | 1-2 ms | Comparable |
| Verify time | ~1 ms | ~1 ms | Identical |
| Quantum safe? | <input checked="" type="checkbox"/> No | <input checked="" type="checkbox"/> Yes | Critical advantage |

Trade-off: Dilithion transactions are ~15x larger than Bitcoin transactions, but provide quantum resistance.

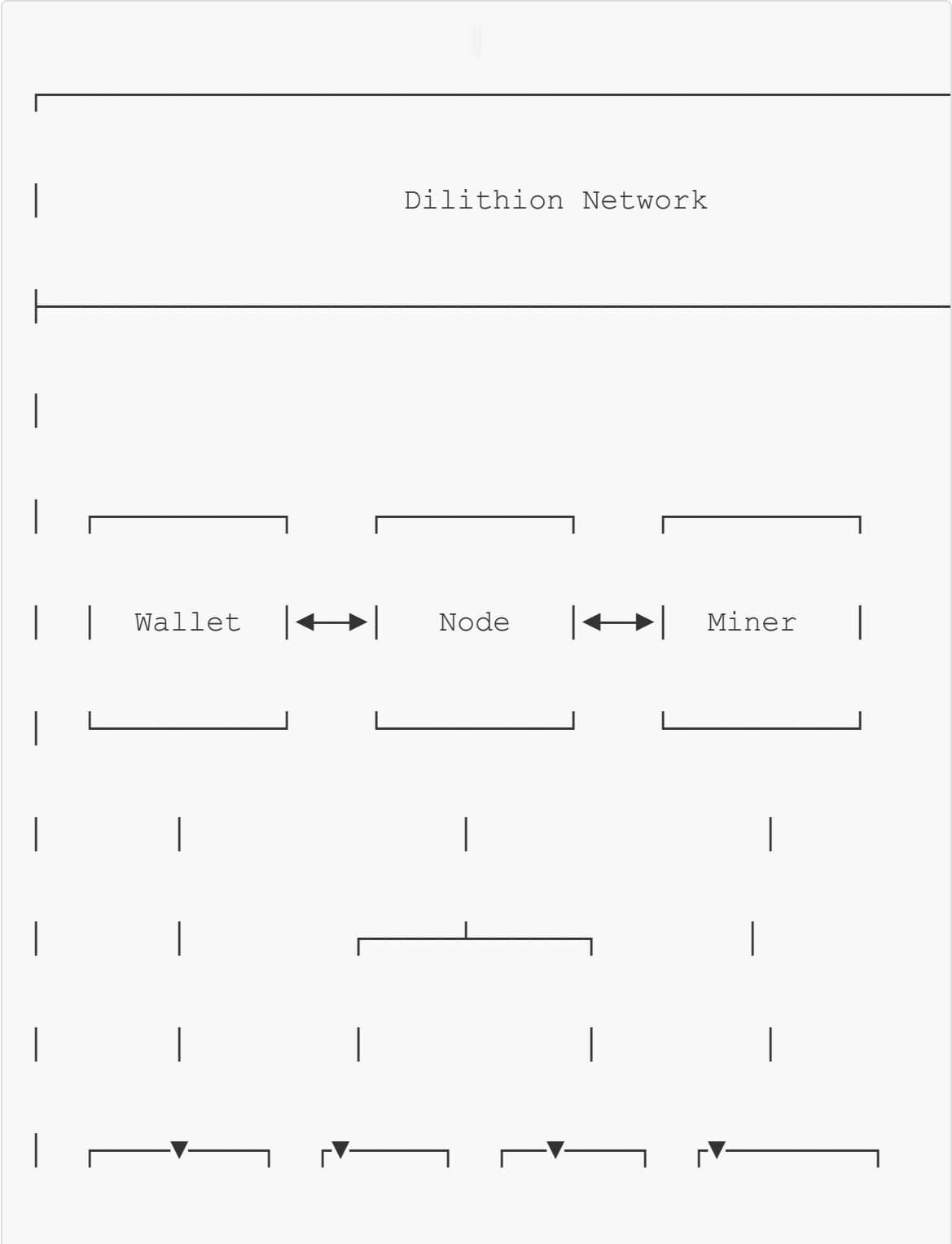
2.3 SHA-3 Hashing

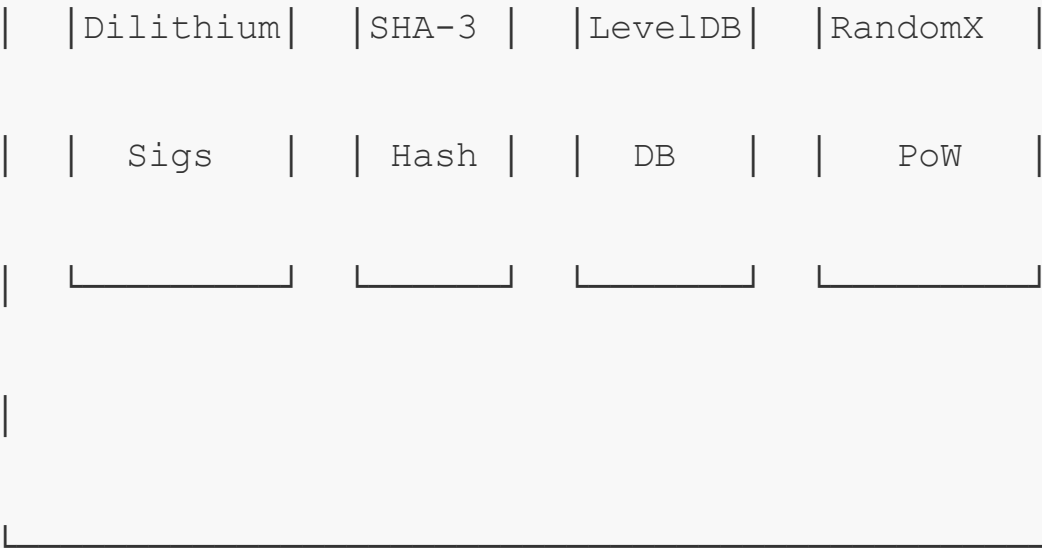
Dilithion uses **SHA-3 (Keccak)** throughout:

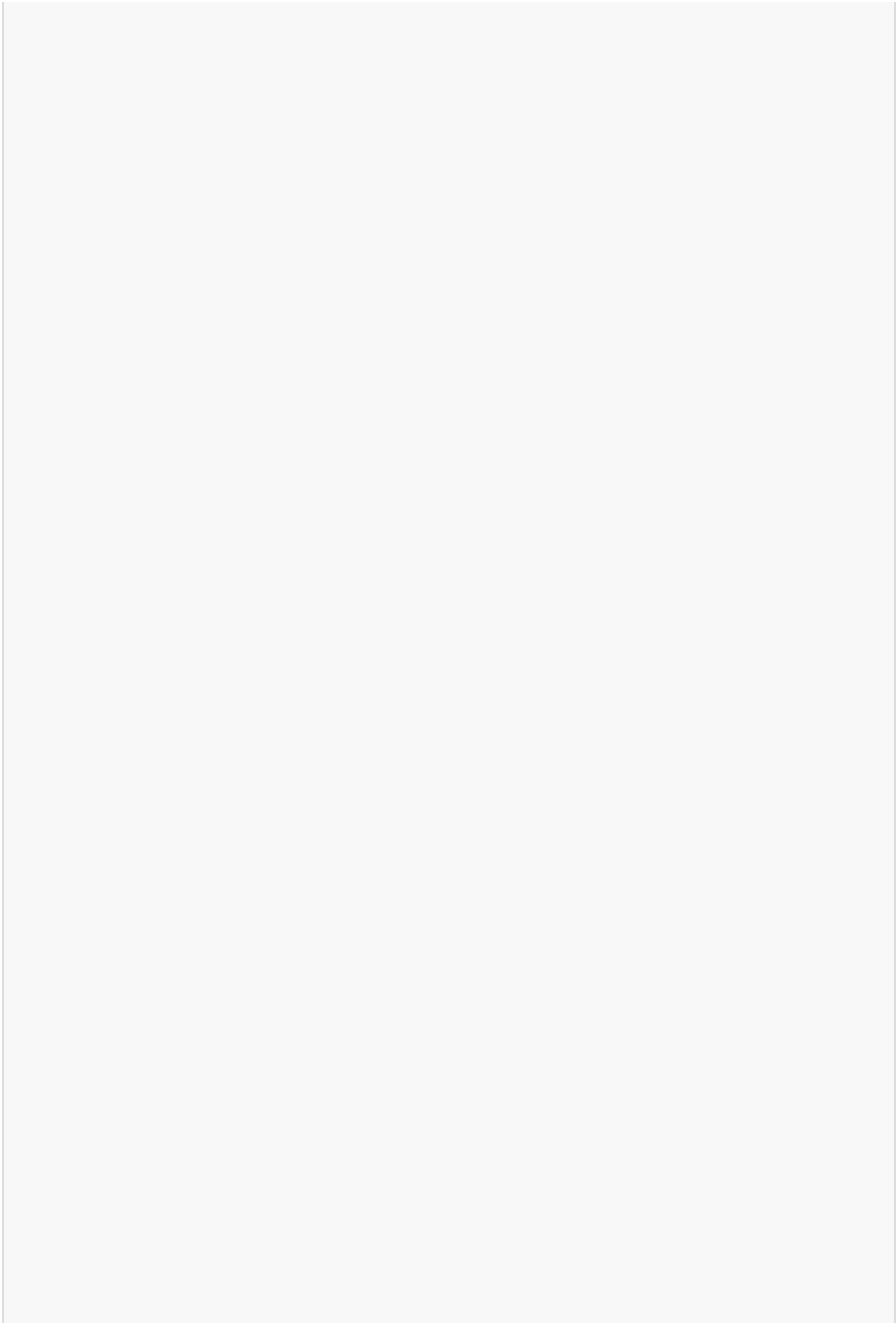
- **Address generation:** SHA3-256
 - **Transaction IDs:** SHA3-256
 - **Merkle trees:** SHA3-256
 - **Wallet encryption:** SHA3-512 with PBKDF2 **Why SHA-3?**
 - Quantum-resistant (Grover's algorithm provides only quadratic speedup)
 - NIST standard (FIPS 202)
 - Different construction than SHA-2 (defense in depth)
 - Well-analyzed and trusted
-

3. Technical Architecture

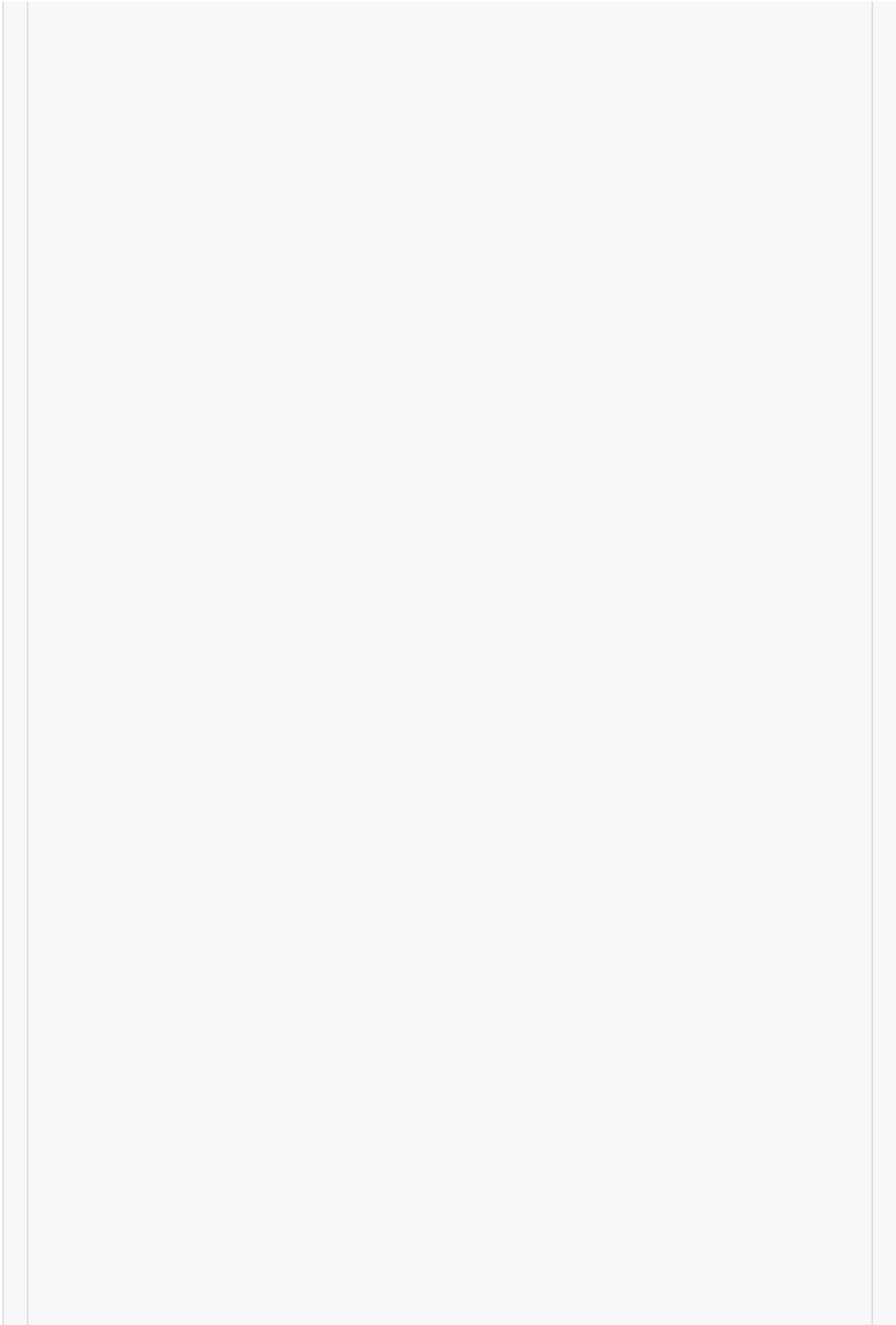
3.1 System Overview







3.2 Transaction Structure



cpp

```
class CTransaction {

    int32_t nVersion;           // Transac

    std::vector vin;           // Inputs

    std::vector vout;          // Outputs

    uint32_t nLockTime;         // Lock ti

};

class CTxIn {

    COutPoint prevout;         // Previo

    std::vector scriptSig;     // Dilithium signat

    uint32_t nSequence;        // Sequenc

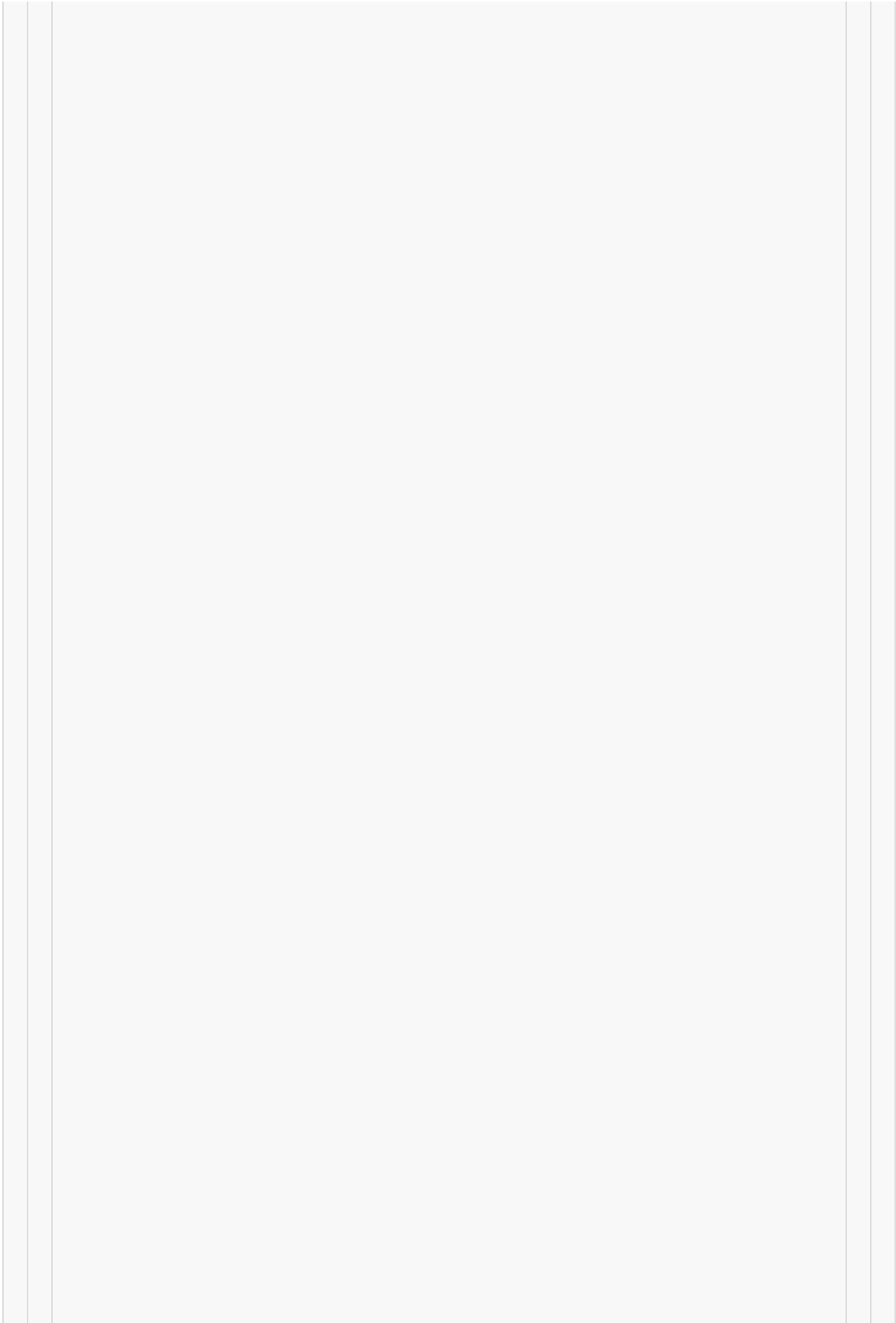
};

class CTxOut {
```

```
CAmount nValue; // Amount

std::vector scriptPubKey; // Dilithium pub

};
```



Typical Transaction Sizes:

- 1-input, 1-output: ~3,864 bytes
- 2-input, 2-output: ~9,598 bytes
- Average: ~5,000-7,000 bytes

Comparison to Bitcoin:

- Bitcoin typical: ~250 bytes
- **Dilithion is ~15x larger** (trade-off for quantum security)

3.3 Currency Units and Denominations

Base Unit: DIL

- Symbol: **DIL**
- Total Supply: 21,000,000 DIL
- Decimal Places: 8

Smallest Unit: ions

- 1 DIL = 100,000,000 ions
- Named after "Dilith-ion" - fitting the post-quantum theme
- Similar to how Bitcoin uses "satoshis" (named after Satoshi)

Denomination Table:

| Unit Name | Value in ions | Value in DIL | |
|----------------|---------------|----------------|---------------|
| ----- | ----- | ----- | |
| ion | 1 | 0.00000001 DIL | Smallest unit |
| kiloion | 1,000 | 0.00001 DIL | Thousand |

| | | | | | | | |
|--|----------------|--|-----------|--|----------|--|---------|
| | megaion | | 1,000,000 | | 0.01 DIL | | Million |
|--|----------------|--|-----------|--|----------|--|---------|

| | | | | | | | |
|--|------------|--|-------------|--|-------|--|---------------|
| | DIL | | 100,000,000 | | 1 DIL | | Base currency |
|--|------------|--|-------------|--|-------|--|---------------|

Why "ions"?

- Consistent with Dilithion branding
- Quantum/scientific theme (from "Dilithium")
- Short, memorable, easy to type
- Avoids confusion with other cryptocurrencies
- Represents the smallest "quantum" of value

Examples:

- Minimum transaction fee: 50,000 ions (0.0005 DIL)
- Typical transaction: 100,000-300,000 ions (0.001-0.003 DIL)
- Block reward (initial): 5,000,000,000 ions (50 DIL)

3.4 Block Structure

```
cpp

class CBlockHeader {

    int32_t nVersion;                // B

    uint256 hashPrevBlock;           // P

    uint256 hashMerkleRoot;          // M

    uint32_t nTime;                  // B

    uint32_t nBits;                  // D

    uint32_t nNonce;                 // R

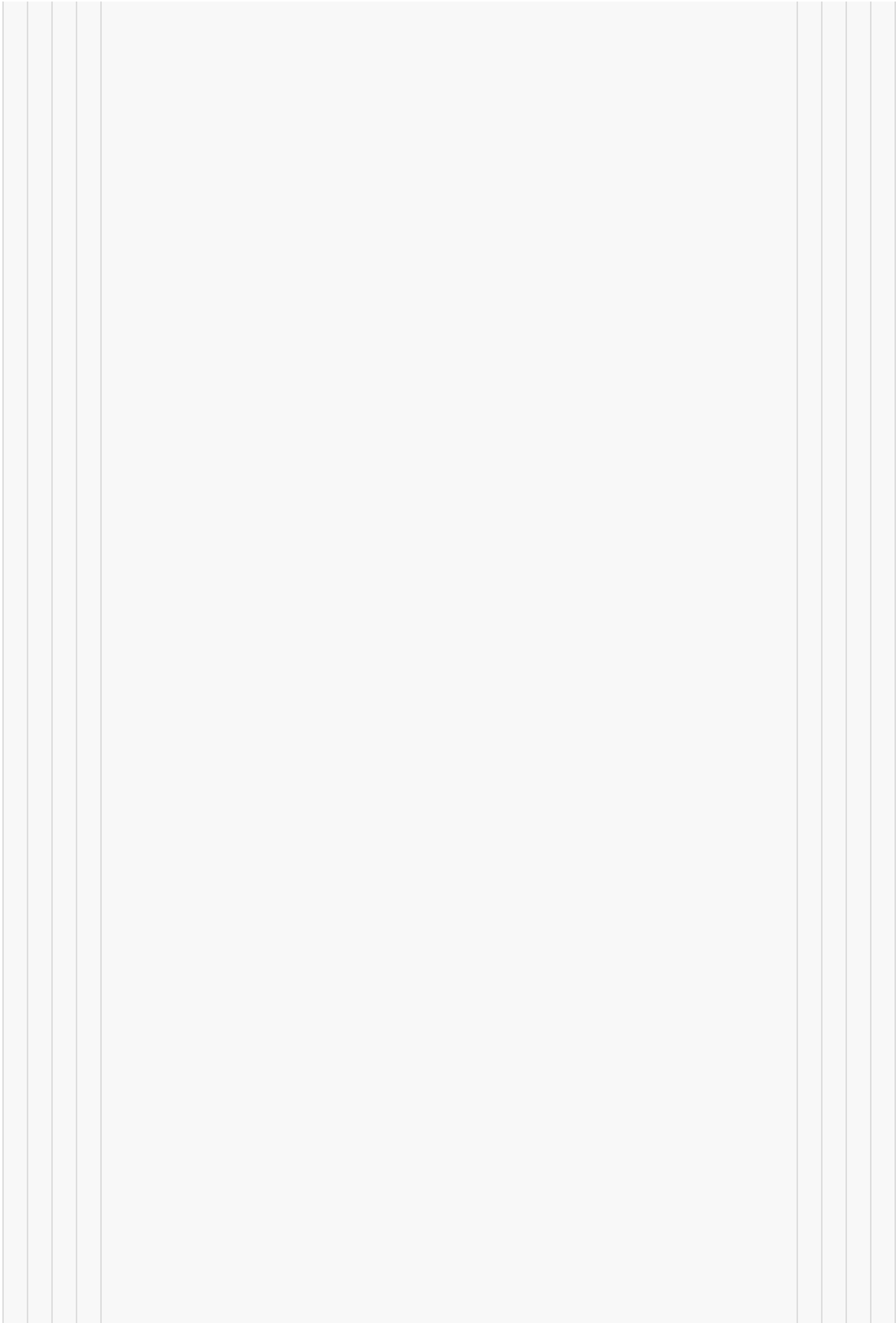
};

class CBlock {

    CBlockHeader header;             // B

    std::vector vtx; // Transactions

};
```

Block Properties:

- **Target time:** 4 minutes (240 seconds)
 - **Max size:** 4 MB (soft limit, adjustable)
 - **Typical size:** ~500 KB - 2 MB
 - **Hash algorithm:** RandomX (for mining)
 - **Header hash:** SHA-3-256
-

4. Consensus Mechanism

4.1 RandomX Proof-of-Work

Design Goals:

- ASIC-resistant (keep mining decentralized)
- CPU-optimized (accessible to everyone)
- Memory-hard (prevent brute force)

RandomX Characteristics:

- **Memory requirement:** 2 GB (dataset)
- **Algorithm:** Random code execution
- **Hash rate:** ~60-80 H/s per CPU core (consumer hardware)
- **ASIC resistance:** High (designed to utilize general-purpose hardware)

Why RandomX?

- **Proven:** Used by Monero since 2019
- **Fair:** Anyone with a CPU can mine
- **Decentralized:** Prevents mining centralization
- **Secure:** Well-analyzed, no shortcuts found

4.2 Block Time: 4 Minutes

Decision Rationale:

Original proposal: 2 minutes (5x faster than Bitcoin)

Final decision: 4 minutes (2.5x faster than Bitcoin)

Why 4 minutes is optimal:

- **Large Signature Propagation**
 - Dilithium signatures: 3,309 byte
 - Typical block: 10-50 transaction
 - Global network needs time to propagate
 - **4 minutes reduces orphan rate by 50%**

- **Blockchain Growth**

2-minute blocks: 720 blocks/day = ~76 blocks/epoch

4-minute blocks: 360 blocks/day = ~36 blocks/epoch

- **Balanced Confirmation Time**

Bitcoin: 10 min/block × 6 confirmations

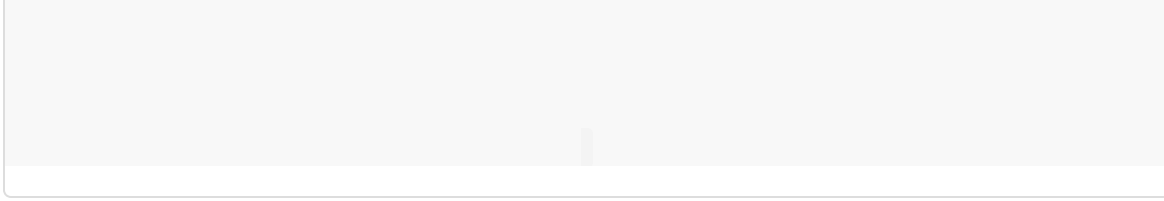
Dilithion: 4 min/block × 3 confirmations

Litecoin: 2.5 min/block × 6 confirmations

- **Better Emission Schedule**

2-min: 62.6% mined in Year 1 (too aggressive)

4-min: 31.3% mined in Year 1 (balanced distribution)



- **Global Mining Fairness**
 - Network latency (200-400ms globally) becomes smaller % of block time
 - Miners worldwide have equal opportunity

4.3 Difficulty Adjustment

Algorithm: Similar to Bitcoin's difficulty adjustment

`cpp`

```
// Adjust difficulty every 2016 blocks

const int64_t DIFFICULTY_ADJUSTMENT_INTERVAL = 2016;

const int64_t BLOCK_TARGET_SPACING = 240; // 4 minutes

// Target timespan: 2016 blocks × 4 minutes = 5.6 days

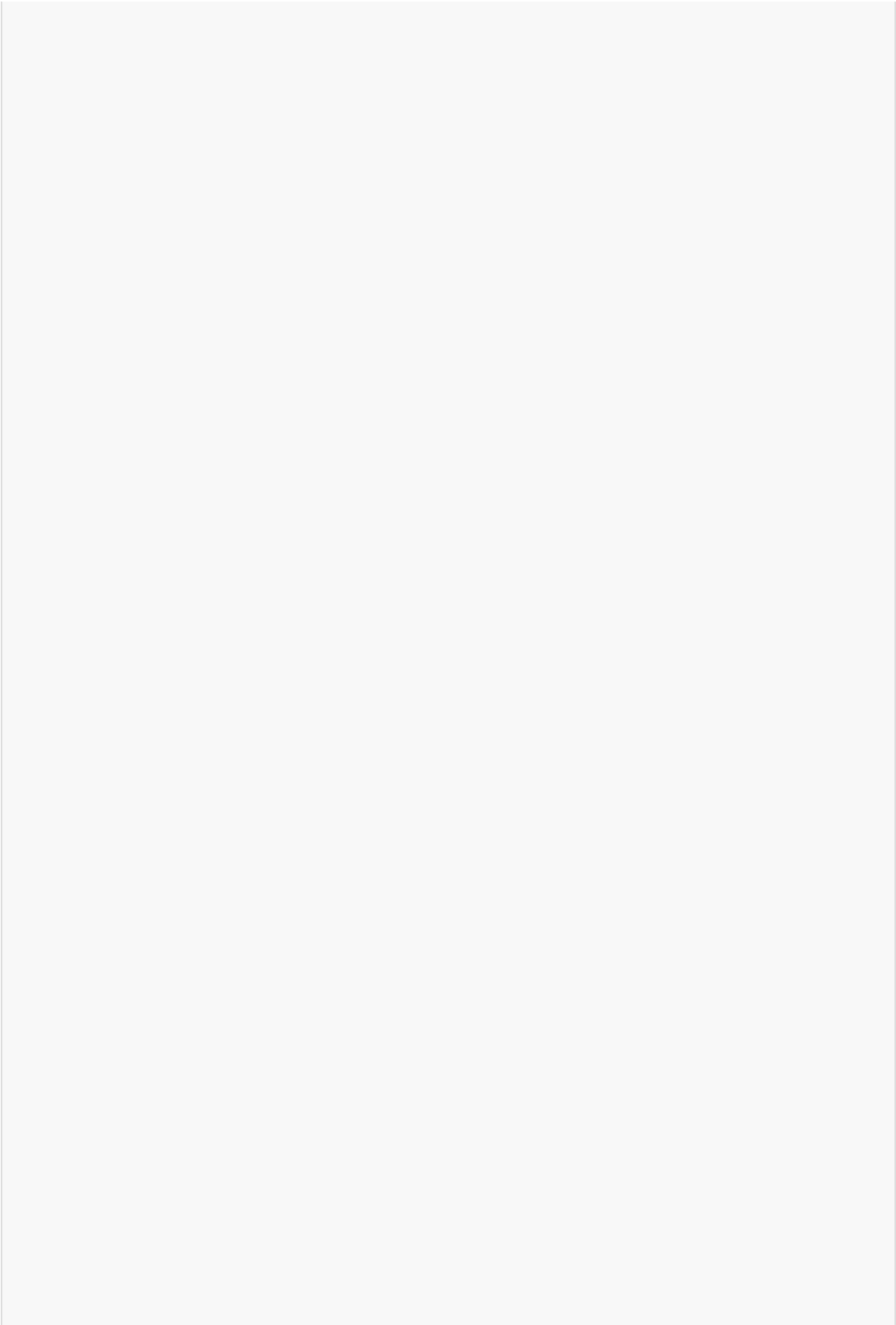
const int64_t TARGET_TIMESPAN = DIFFICULTY_ADJUSTMENT_INTERVAL * BLOCK_TARGET_SPACING;

// Difficulty adjustment formula:

new_difficulty = old_difficulty * (actual_time / target_time)

// With bounds:

new_difficulty = clamp(new_difficulty, old_difficulty * 0.9, old_difficulty * 1.1)
```



Properties:

- Adjusts every ~5.6 days
- Maximum change: 4x per adjustment
- Prevents difficulty manipulation attacks
- Responsive to hash rate changes

4.4 Timestamp Validation

Rules:

- Block time must not be more than **2 hours in the future**
- Block time must be greater than **median-time-past** (last 11 blocks)

Prevents:

- Time manipulation attacks
 - Difficulty adjustment gaming
 - Chain reorganization exploits
-

5. Economic Model

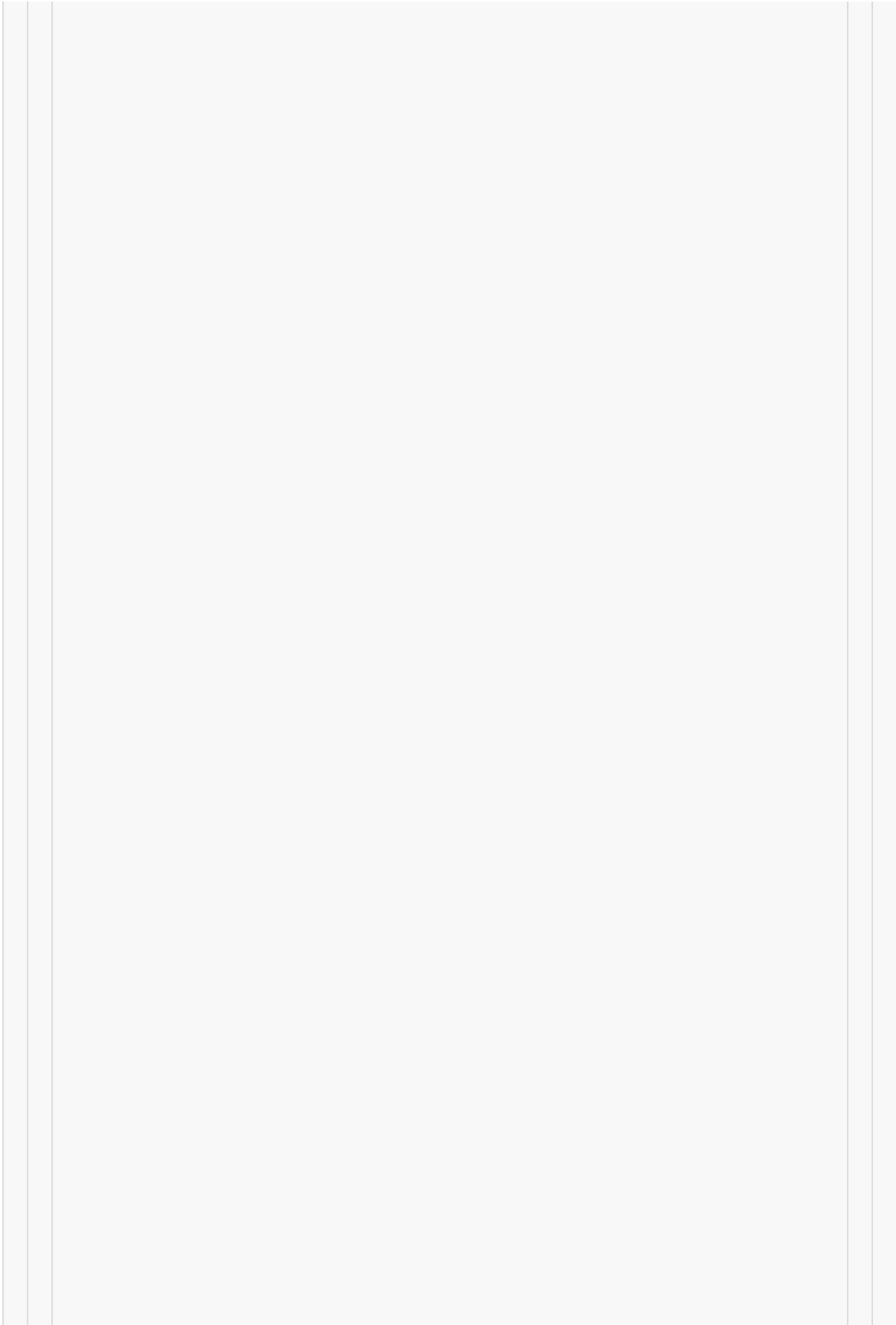
5.1 Supply Schedule

Total Supply: 21,000,000 DIL (fixed cap)

Initial Reward: 50 DIL per block

Block Time: 4 minutes (240 seconds)

Halving: Every 210,000 blocks (~1.6 years)



5.2 Emission Schedule

| Halving | Block Range | Reward | Duration |
|---------|----------------|-----------|------------|
| ----- | ----- | ----- | ----- |
| 0 | 0 - 209,999 | 50 DIL | 1.60 years |
| 1 | 210k - 419,999 | 25 DIL | 1.60 years |
| 2 | 420k - 629,999 | 12.5 DIL | 1.60 years |
| 3 | 630k - 839,999 | 6.25 DIL | 1.60 years |
| 4+ | 840k+ | <6.25 DIL | ~8 years |

Year-by-Year Emission:

- **Year 1:** 6,570,000 DIL (31.3% of total supply)
- **Year 2:** 5,250,000 DIL (25.0%)
- **Year 3:** 3,285,000 DIL (15.6%)
- **Year 5:** 89.1% mined
- **Year 13:** 99%+ mined

5.3 Comparison to Bitcoin

| Metric | Bitcoin | Dilithion | Ratio |
|-----------------|----------------|-------------|-------------|
| | | | |
| Total Supply | 21M BTC | 21M DIL | 1:1 |
| Initial Reward | 50 BTC | 50 DIL | 1:1 |
| Block Time | 10 min | 4 min | 2.5x faster |
| Halving Period | 210,000 blocks | 210,000 | |
| First Halving | ~4 years | ~1.6 years | 2.5x faster |
| 99% Mined | ~32 years | ~12.8 years | 2.5x faster |
| Year 1 Emission | 12.5% | 31.3% | 2.5x faster |

Conclusion: Dilithion's emission is **exactly 2.5x faster** than Bitcoin's

5.4 Transaction Fees

Fee Model (Option A):

`cpp`

```
// Consensus parameters
```

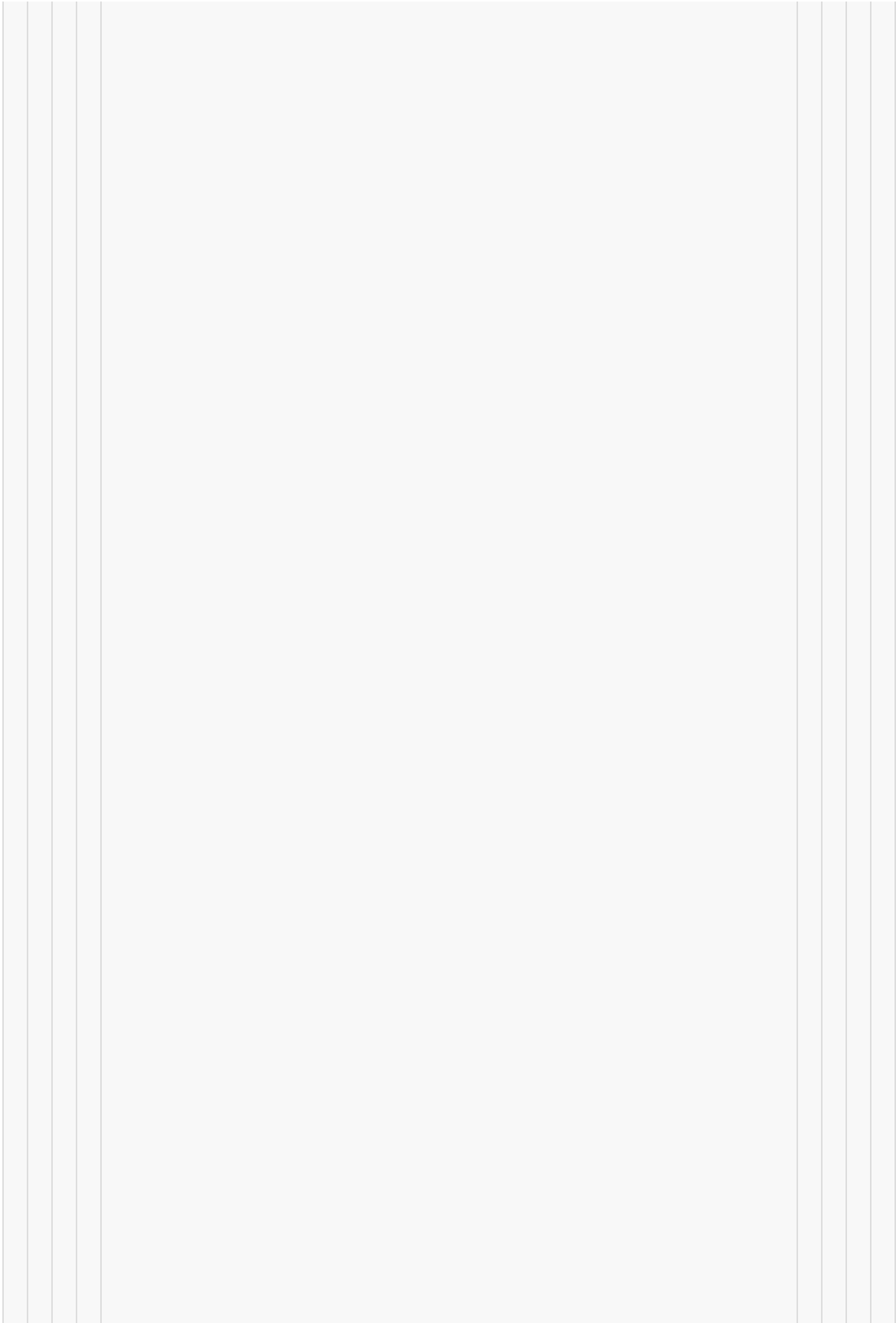
```
MIN_TX_FEE = 50,000 ions           // 0.0
```

```
FEE_PER_BYTE = 25 ions             // 25
```

```
MIN_RELAY_TX_FEE = 100,000 ions    // 0.0
```

```
// Fee calculation
```

```
fee = MIN_TX_FEE + (transaction_size_byt
```



Typical Transaction Fees:

| Transaction Type | Size | Fee (DIL) |
|------------------|-------------|-----------|
| ----- | ----- | ----- |
| 1-in, 1-out | 3,864 bytes | 0.00147 |
| 1-in, 2-out | 5,816 bytes | 0.00195 |
| 2-in, 2-out | 9,598 bytes | 0.00290 |

Design Goals:

- **Affordable:** Fees remain negligible (<\$0.003 per transaction)
- **Spam protection:** 3x higher than minimal baseline (proposed)
- **Miner incentives:** Provides meaningful revenue (3x initial)
- **Sustainable:** Scales with transaction complexity

Long-term Fee Market:

- **Short-term:** Fixed fee model (simple, predictable)
- **Year 1-2:** Monitor usage patterns and fee adequacy
- **Year 2+:** Implement dynamic fee market (EIP-1559 style)

5.5 Inflation Rate

| Year | Supply Start | Annual Emission |
|-------|--------------|-----------------|
| ----- | ----- | ----- |

| | | | | | | | | | |
|--|----|--|-------------|--|-----------|--|-----------|--|-----|
| | 1 | | 0 | | 6,570,000 | | 6,570,000 | | N/A |
| | 2 | | 6,570,000 | | 5,250,000 | | 11,820, | | |
| | 3 | | 11,820,000 | | 3,285,000 | | 15,105 | | |
| | 4 | | 15,105,000 | | 1,965,000 | | 17,070 | | |
| | 5 | | 17,070,000 | | 1,642,500 | | 18,712 | | |
| | 10 | | ~20,200,000 | | ~205,000 | | ~20,4 | | |
| | 20 | | ~20,900,000 | | ~12,800 | | ~20,91 | | |

Observation: Inflation drops to single digits by Year 20

6. Network Security

6.1 Attack Vector Analysis

6.1.1 51% Attack

Definition: Attacker controls >50% of network hash

Dilithion Defenses:

- **RandomX CPU Mining**
 - No ASICs available (ASIC-resistance)
 - Attacker must acquire thousands of GPUs
 - Very expensive and detectable

- **Confirmation Requirements**

Small tx (<\$100): 3 confirmations

Medium tx (\$1K): 6 confirmations

Large tx (\$10K+): 10 confirmations

Exchange deposits: 20+ confirmation

- **Economic Disincentive**

Attack cost: \$20,000-\$50,000 (hardware)

Attack profit: \$1,000-\$5,000 (one-time, if

Consequence: Coin price crashes, attacker's

Result: Attacker loses money

Risk Level: LOW to MEDIUM (economically impractical)

6.1.2 Double-Spend Attack

Mitigation:

- Requires 51% attack to succeed
- Exchanges wait for multiple confirmations
- Cost exceeds potential gain

Risk Level: LOW (same as 51% attack)

6.1.3 Sybil Attack

Definition: Attacker creates many fake network nodes

Dilithion Defenses:

- Mining power matters, not node count
- Nodes don't receive rewards (no incentive to fake)
- Peer quality scoring (future enhancement)

Risk Level: LOW (ineffective attack vector)

6.1.4 Eclipse Attack

Definition: Isolate a node from the honest network

Mitigation:

- Multiple seed nodes (DNS + hardcoded)
- Peer diversity requirements
- Automatic peer discovery


Risk Level: LOW (standard Bitcoin-style defenses)

6.1.5 Quantum Computer Attack

Definition: Use quantum computer to break cryptography

Dilithion Defense:

- **Signatures:** Quantum-resistant (Dilithium3)
- **Hashing:** Quantum-resistant (SHA-3, only Grover speedup)
- **Mining:** Quantum computers provide minimal advantage (Grover = 2x sp

Verdict:  **Dilithion is quantum-safe** (primary design goal)

6.2 Wallet Security

Features:

- **AES-256-CBC Encryption**
 - Industry-standard wallet encryption
 - PBKDF2-SHA3 key derivation (100,000 rounds)
 - Two-tier architecture (master key + encrypted)
- **Lock/Unlock Mechanism**
 - Automatic lock after timeout
 - Secure memory wiping
 - Password strength requirements
- **Backup & Recovery**
 - Binary wallet file format (DILWLT01)
 - Encrypted backups
 - **Future:** HD wallet with 24-word seed phrase (

Best Practices:

- Always encrypt wallet with strong passphrase
- Regular backups to multiple locations
- Store backups encrypted
- Use cold storage for large amounts

6.3 Network Monitoring

Planned Infrastructure:

- **Seed Nodes:** 3-5 globally distributed nodes
 - **DNS Seeds:** Automatic peer discovery
 - **Block Explorer:** Public blockchain viewer
 - **Hash Rate Monitor:** Real-time network statistics
-

7. Roadmap

7.1 Genesis Launch (January 1, 2026)

Launch Specifications:

- **Genesis timestamp:** January 1, 2026, 00:00:00 UTC
- **Initial difficulty:** Bitcoin-equivalent (0x1d00ffff)
- **First halving:** Block 210,000 (~July 2027)
- **Network:** Mainnet with seed nodes

Launch Readiness:

- ☒ Core node implementation complete
- ☒ Wallet functionality complete
- ☒ Mining integration complete
- ☒ Consensus parameters finalized
- ☒ Security features implemented
- ☒ Testing complete

7.2 Month 1-2 (Launch Infrastructure)

Priority Features:

• Desktop GUI Wallet

- User-friendly interface
- One-click mining
- Visual transaction history
- Windows, macOS, Linux support

• Website Launch

- Countdown timer
- Live network dashboard
- Getting started guide
- Documentation

• Block Explorer

- View blocks and transactions
- Search functionality

- Network statistics
- API for developers

-

Mining Pool Software

- Stratum protocol implementation
- Pool operator toolkit
- Fair reward distribution

7.3 Month 2-3 (Ecosystem Growth)

Key Milestones:

-

HD Wallet Implementation (HIGH PRIORITY)

- 24-word seed phrase recovery
- BIP32/BIP39 adapted for Dilithium
- Infinite address generation from single seed
- **Impact:** Prevents coin loss, major UX improvement

-

Mobile Wallets

- iOS app

- Android app
- QR code scanning
- Push notifications
- SPV-style lightweight verification

- **Exchange Listings**

- Engage major exchanges (Binance, Coinbase, Kraken)
- Provide integration documentation
- Listing applications submitted

- **Dynamic Fee Market**

- Fee estimation API
- Market-driven pricing
- Mempool analytics

7.4 Month 6+ (Advanced Features)

Long-term Enhancements:

- **Payment Integration**
 - Merchant tools
 - Point-of-sale systems
 - E-commerce plugins
- **Hardware Wallet Support**
 - Research custom PQC hardware wallet
 - Ledger/Trezor collaboration exploration
 - Secure key storage solutions
- **Layer 2 Scaling**
 - Lightning Network research (adapted for PQC)
 - Payment channels
 - Atomic swaps
- **Signature Aggregation**
 - Research academic developments
 - Implement if available (75-85% size reduction)

- Significant transaction size improvement

7.5 Year 2+ (Ecosystem Maturity)

Vision:

• DeFi Integration

- Decentralized exchanges
- Lending protocols
- Liquidity pools

• Smart Contracts (Research)

- Post-quantum compatible VM
- Turing-complete capabilities
- Security-first design

• Privacy Features (Optional)

- Ring signatures or similar
- Optional privacy transactions

- Balance transparency vs. privacy

- **Cross-chain Bridges**

- Connect to other blockchains
 - Atomic swaps
 - Interoperability protocols
-

8. Conclusion

8.1 Why Dilithion Matters

The Quantum Threat is Real:

- Timeline: 5-10 years to cryptographically relevant quantum computer
- Existing cryptocurrencies are vulnerable
- Transition will be difficult and contentious

- **Action needed now**

Dilithion's Solution:

- Built quantum-safe from genesis
- No migration required
- Users protected from day one
- Proven cryptography (NIST standard)

8.2 Technical Excellence

Optimized for Post-Quantum Era:

- 4-minute blocks accommodate large signatures
- Balanced emission schedule (31.3% Year 1)
- Affordable transaction fees
- ASIC-resistant CPU mining
- Professional-grade security

Comparison to Competition:

| Feature | Bitcoin | Ethereum | Other PQC Projects |
|-------------------------|----------|-----------|--------------------|
| Quantum-safe signatures | ✗ No | ✗ No | ⚠ Partial |
| ASIC-resistant mining | ✗ No | N/A (PoS) | Varies |
| Optimized for PQC | ✗ No | ✗ No | ⚠ Partial |
| Fixed supply | ✓ Yes | ✗ No | Varies |
| Launch readiness | ✓ Mature | ✓ Mature | ⚠ Early |

8.3 Fair Launch Principles

Dilithion adheres to fair launch principles:

- ☒ No premine
- ☒ No ICO / token sale
- ☒ No founder allocation
- ☒ No venture capital pre-allocation
- ☒ Pure proof-of-work from genesis
- ☒ Open-source (MIT license)
- ☒ Community-driven development

Everyone starts equal on January 1, 2026.

8.4 Long-term Vision

Dilithion aims to be:

- **The standard** for quantum-safe cryptocurrency
- **A store of value** in the post-quantum era
- **A medium of exchange** with reasonable fees
- **A platform** for decentralized applications
- **A community** of quantum-aware developers and users

Mission Statement:

> "Secure digital currency for the quantum age, b

8.5 Call to Action

For Miners:

- CPU mining opens January 1, 2026
- Fair distribution, no ASIC advantage
- Early adoption opportunity

For Developers:

- Open-source codebase (GitHub)

- Documentation available
 - Contribute to post-quantum crypto future
- For Users:**
- Download wallet before launch
 - Participate in first quantum-safe cryptocurrency
 - Be part of the solution
- For Investors:**
- Study the technology
 - Understand the quantum threat
 - Position for the post-quantum era
-

Technical Specifications Summary

| Parameter | Value |
|-------------------------|--------------------------------------|
| ----- | ----- |
| Launch Date | January 1, 2026, 00:00:00 UTC |
| Total Supply | 21,000,000 DIL |
| Block Time | 4 minutes (240 seconds) |
| Block Reward | 50 DIL (halves every 210,000 blocks) |
| Halving Interval | Every 210,000 blocks (~1.6 years) |

| | | |
|--------------------------------|--|--|
| Signature Algorithm | CRYSTALS-Dilithium3 (NIST FIPS 204) | |
| Hash Algorithm | SHA-3-256 (NIST FIPS 202) | |
| Mining Algorithm | RandomX (Monero-derived, ASIC-resistant) | |
| Difficulty Adjustment | Every 2,016 blocks (~5.25 days) | |
| Address Format | Dilithium3 public key hash (SHA-3-256) | |
| Transaction Fee | 0.0005 DIL base + 25 sats/byte | |
| Confirmations (typical) | 3-10 blocks (12-40 minutes) | |
| Genesis Block | Hardcoded, January 1, 2026 | |

References

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Appendix A: Glossary

ASIC (Application-Specific Integrated Circuit): Specialized hardware

CRYSTALS-Dilithium: NIST-standardized post-quantum digital signature

Halving: Reduction of block reward by 50%, occurs every 210,000 blocks

Hash Rate: Measure of mining computational power, typically measured

Lattice Cryptography: Post-quantum cryptographic approach based on

Module-LWE: Learning With Errors over Module Lattices, the hard problem

Orphan Block: Valid block that's not included in the longest chain, also

Post-Quantum Cryptography (PQC): Cryptographic algorithms designed

RandomX: ASIC-resistant proof-of-work algorithm optimized for general

SHA-3: Secure Hash Algorithm 3, NIST-standardized hash function (Keccak)

Shor's Algorithm: Quantum algorithm that can break RSA and ECDSA in

Appendix B: Contact & Community

Website: <https://dilithion.org> (launching soon)

GitHub: <https://github.com/WillBarton888/dilithion>

Discord: [Community server - launching Week 2]

Twitter/X: @DilithionCoin

Reddit: r/dilithion

Contact:

- **General Inquiries:** team@dilithion.org
- **Security Reports:** security@dilithion.org
- **Media Inquiries:** media@dilithion.org
- **User Support:** support@dilithion.org

Dilithion Whitepaper v1.0

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"Quantum-Safe. Community-Driven. Fair Launch."

Disclaimer: This whitepaper is for informational and educational pu