

# XyloNet - Complete Project Documentation & Future Vision

*Comprehensive documentation covering current implementation, deployed infrastructure, and proposed enhancements for Arc Builders Fund alignment*

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## PART A: CURRENT IMPLEMENTATION

### Executive Summary

**XyloNet** is a comprehensive DeFi protocol built exclusively for Arc Network, combining three core primitives into a unified stablecoin SuperExchange:

Component	Description	Status
<b>XyloSwap</b>	StableSwap AMM for stablecoin trading	<input checked="" type="checkbox"/> Live
<b>XyloBridge</b>	Circle CCTP V2 cross-chain bridge	<input checked="" type="checkbox"/> Live
<b>XyloVault</b>	ERC-4626 yield aggregation vault	<input checked="" type="checkbox"/> Live

### Key Metrics

- **Network:** Arc Testnet (Chain ID: 5042002)
- **Contracts Deployed:** 6 verified contracts

- **Supported Tokens:** USDC, EURC, USYC
  - **Bridge Chains:** 7 networks (Ethereum, Arbitrum, Base, Optimism, Polygon, Avalanche, Arc)
  - **Transaction Cost:** ~\$0.01 per operation
  - **Finality:** <350ms deterministic
  - **Live URL:** <https://xylonet.xyz>
- 

## Project Vision & Mission

### Vision

To become the premier stablecoin exchange infrastructure on Arc Network, enabling seamless trading, bridging, and yield generation for the internet economy.

### Mission

1. **Democratize Stablecoin Access:** Enable anyone to swap, bridge, and earn yield on stablecoins with minimal friction
2. **Maximize Capital Efficiency:** Use StableSwap curves for minimal slippage on large trades
3. **Enable Global Payments:** Leverage CCTP V2 for instant cross-border USDC transfers
4. **Generate Sustainable Yield:** Provide safe, auto-compounding yield strategies

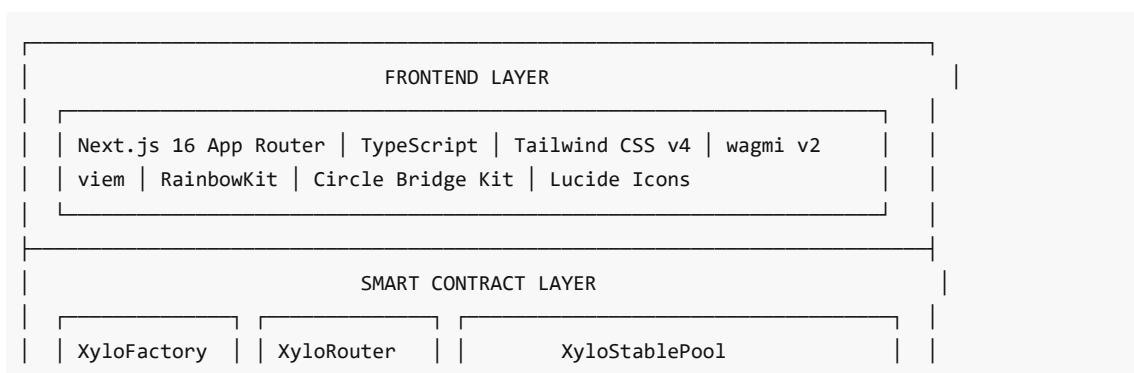
### Core Value Propositions

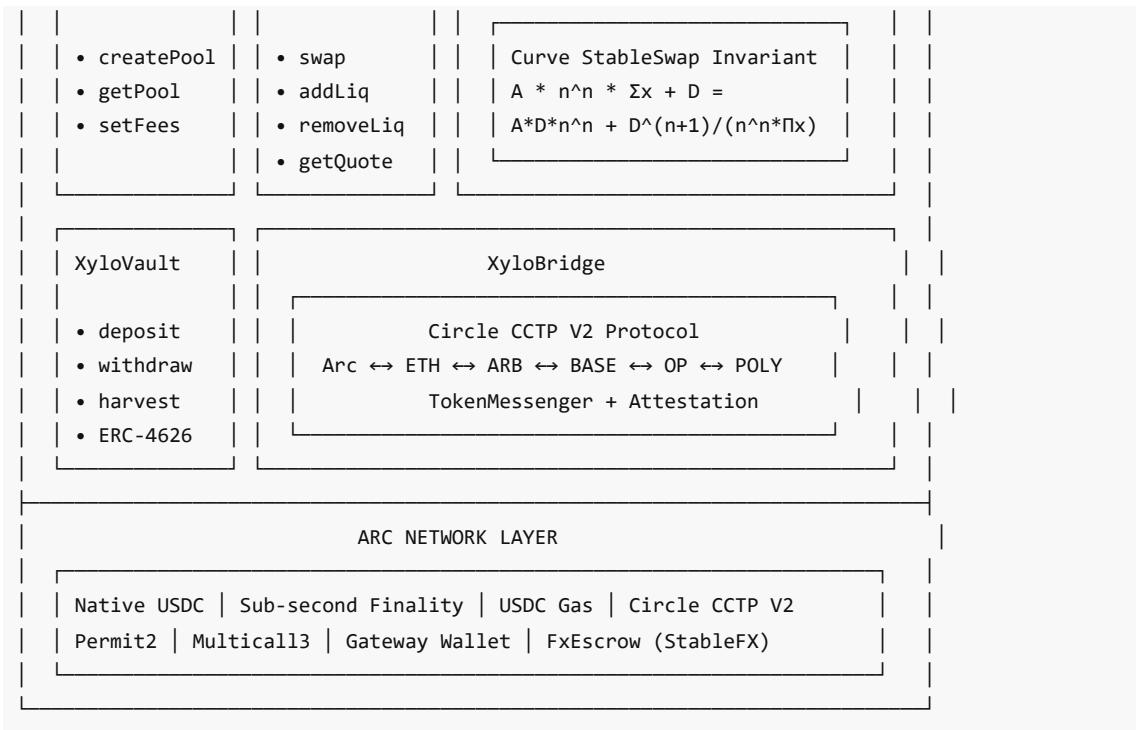
Value	How XyloNet Delivers
<b>Instant Settlement</b>	<350ms deterministic finality on Arc Network
<b>Predictable Costs</b>	~\$0.01 per transaction, denominated in USDC (not volatile ETH)
<b>Native Cross-Chain</b>	Circle CCTP V2 - no wrapped tokens, native USDC everywhere
<b>Real Yield</b>	USYC integration for Treasury-backed yields
<b>Enterprise Ready</b>	Compliance-friendly with opt-in privacy features
<b>Mobile First</b>	Fully responsive UI for mobile traders
<b>Immersive UX</b>	Revolutionary animations, 3D effects, and glassmorphism

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## Technical Architecture

### System Overview





## Directory Structure

```

XyloNet/
├── contracts/                      # Solidity smart contracts
│   ├── src/
│   │   ├── core/                  # Core DEX infrastructure
│   │   │   ├── XyloFactory.sol    # Pool deployment factory
│   │   │   ├── XyloRouter.sol     # Swap routing & execution
│   │   │   ├── XyloStablePool.sol # StableSwap AMM
│   │   │   └── XyloERC20.sol     # LP token standard
│   │   ├── bridge/                # CCTP V2 bridge wrapper
│   │   └── vault/                 # ERC-4626 yield vault
│   └── interfaces/                 # Contract interfaces
├── scripts/
│   ├── deploy.js                   # Deployment automation
│   └── add-liquidity.js           # Liquidity bootstrap
├── hardhat.config.js
└── package.json

└── frontend/                      # Next.js application
    ├── src/
    │   ├── app/                    # App Router pages
    │   │   ├── page.tsx            # Home / Swap interface
    │   │   ├── bridge/              # Bridge interface
    │   │   ├── pools/                # Liquidity pools
    │   │   ├── vault/                # Yield vault
    │   │   └── history/              # Transaction history

```

```
|- layout.tsx           # Root layout
|- globals.css         # Global styles + mobile CSS
|- components/
|   |- swap/SwapWidget.tsx
|   |- bridge/BridgeWidget.tsx
|   |- ui/               # Reusable UI components
|       |- Toast.tsx
|       |- TokenLogos.tsx
|       |- Skeleton.tsx
|       |- Tooltip.tsx
|       |- Confetti.tsx
|       |- EmptyState.tsx
|       |- AnimatedBackground.tsx
|       |- TiltCard.tsx
|       |- AnimatedElements.tsx
|       |- CommandPalette.tsx
|       |- Header.tsx
|       |- Footer.tsx
|       |- Providers.tsx
|- config/
|   |- wagmi.ts
|   |- constants.ts
|   |- abis/
|- lib/
|   |- utils.ts
|   |- transactions.ts
|- package.json

|- XYLONET_PROJECT.md
|- IMPLEMENTATION_PLAN.md
|- README.md
|- SECURITY.md
|- CONTRIBUTING.md
```

## Smart Contracts Deep Dive

## 1. XyloFactory

**Purpose:** Manages pool deployment and protocol configuration.

**Address:** 0x60EDeFB094B84BBC6430cc130B358A43Ba1979e2

## **Key Functions:**

Function	Parameters	Description
createPool	tokenA, tokenB, A	Deploy new StableSwap pool
getPool	tokenA, tokenB	Get pool address
setSwapFee	fee	Update global swap fee (owner)
setFeeRecipient	recipient	Set protocol fee recipient

setPaused	status	Emergency pause (owner)
-----------	--------	-------------------------

#### Protocol Parameters:

Parameter	Value	Description
Swap Fee	0.04% (4 bps)	Fee charged on each swap
Protocol Fee	50%	Portion of swap fee to protocol
Default A	200	Amplification parameter

## 2. XyloRouter

**Purpose:** User-friendly interface for swaps and liquidity operations.

**Address:** 0x73742278c31a76dBb0D2587d03ef92E6E2141023

#### Swap Interface:

```
struct SwapParams {
    address tokenIn;
    address tokenOut;
    uint256 amountIn;
    uint256 minAmountOut;
    address to;
    uint256 deadline;
}

function swap(SwapParams calldata params) external returns (uint256 amountOut);
```

#### Liquidity Interface:

```
function addLiquidity(AddLiquidityParams calldata params) external returns (uint256 lpTokens);
function removeLiquidity(RemoveLiquidityParams calldata params) external returns (uint256, uint256);
```

#### Quote Functions:

```
function getAmountOut(address tokenIn, address tokenOut, uint256 amountIn)
    external view returns (uint256);
```

## 3. XyloStablePool

**Purpose:** Implements Curve's StableSwap invariant for minimal slippage.

#### Deployed Pools:

Pool	Address	Tokens
------	---------	--------

USDC-EURC	0x3DF3966F5138143dce7a9cFDdC2c0310ce083BB1	USDC ↔ EURC
USDC-USYC	0x8296cC7477A9CD12cF632042fDDc2aB89151bb61	USDC ↔ USYC

#### StableSwap Curve Formula:

$$A * n^n * \sum x_i + D = A * D * n^n + D^{(n+1)} / (n^n * \prod x_i)$$

Where:

- **A** = Amplification parameter (200) - controls curve tightness
- **n** = Number of tokens (2)
- **D** = Total liquidity invariant
- **x\_i** = Reserve of token i

#### Why StableSwap?

- Near-zero slippage for stablecoin pairs at normal volumes
- 10-100x better rates than constant product AMM for pegged assets
- Ideal for USDC ↔ EURC (both pegged to fiat)

## 4. XyloBridge

**Purpose:** Cross-chain USDC transfers via Circle's CCTP V2.

**Address:** 0xf7Df65Ce418E938ee8d9a0A0d227A43441fe4641

#### CCTP V2 Integration:

```
function bridgeToChain(
    uint256 amount,
    string calldata chainName,
    address recipient
) external returns (bytes32 nonce);
```

#### Supported Chains (CCTP Domain IDs):

Chain	Domain ID	Network	Status
Ethereum	0	Sepolia	<input checked="" type="checkbox"/> Active
Avalanche	1	Fuji	<input checked="" type="checkbox"/> Active
Optimism	2	Sepolia	<input checked="" type="checkbox"/> Active
Arbitrum	3	Sepolia	<input checked="" type="checkbox"/> Active
Base	6	Sepolia	<input checked="" type="checkbox"/> Active
Polygon	7	Amoy	<input checked="" type="checkbox"/> Active
Arc Network	26	Testnet	<input checked="" type="checkbox"/> Active

#### Bridge Flow:

1. User initiates bridge → Approve USDC
  2. XyloBridge calls `depositForBurn` on TokenMessengerV2
  3. Circle attests the burn
  4. Bridge Kit automatically mints on destination chain
  5. User receives native USDC (~30 seconds for fast mode)
- 

## 5. XyloVault

**Purpose:** ERC-4626 compliant yield vault for USDC deposits.

**Address:** 0x240Eb85458CD41361bd8C3773253a1D78054f747

**ERC-4626 Interface:**

```
// Deposit assets, receive shares
function deposit(uint256 assets, address receiver) external returns (uint256 shares);

// Withdraw assets by burning shares
function withdraw(uint256 assets, address receiver, address owner) external returns (uint256 shares);

// Preview functions
function previewDeposit(uint256 assets) external view returns (uint256);
function previewWithdraw(uint256 shares) external view returns (uint256);
```

**Fee Structure:**

Fee Type	Rate	Description
Deposit Fee	0%	No entry fee
Withdraw Fee	0.1%	Small exit fee
Performance Fee	10%	On profit only

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## Frontend Application

**Technology Stack**

Technology	Version	Purpose
Next.js	16	React framework with App Router
TypeScript	5.x	Type safety
Tailwind CSS	4.x	Utility-first styling
wagmi	2.x	React Hooks for Ethereum
viem	2.x	TypeScript Ethereum client
RainbowKit	2.x	Wallet connection

Circle Bridge Kit	Latest	Cross-chain UI
Lucide React	Latest	Icon library
Vercel Analytics	Latest	Performance monitoring

## Pages

Route	Description	Features
/	Swap	Token swap with slippage control, price impact display
/bridge	Bridge	Cross-chain USDC transfer with chain selector
/pools	Pools	Liquidity management, TVL, APY display
/vault	Vault	USDC yield vault with APY tracking
/history	History	Transaction history with filtering

## Revolutionary UI/UX Components

Component	Description
<b>AnimatedBackground</b>	Canvas particle system with 120+ particles, aurora effect, mouse interaction
<b>TiltCard</b>	3D perspective cards with customizable tilt (0-20°), dynamic glare
<b>AnimatedElements</b>	Magnetic buttons, counting animations, floating elements
<b>CommandPalette</b>	Keyboard navigation (Ctrl+K) with fuzzy search
<b>Toast</b>	Transaction notifications with status
<b>Confetti</b>	Success celebration effects

## Mobile Responsiveness

- **Touch-friendly targets:** Minimum 44-48px height
- **Bottom sheet modals:** Slide-up modals on mobile
- **Safe area insets:** Support for notched devices
- **Active state feedback:** Visual feedback on touch
- **Responsive typography:** Scaled text sizes
- **Horizontal scroll:** Filter pills with scroll

## Feature Breakdown

### 1. XyloSwap (Token Exchange)

#### User Journey:

1. Connect wallet → Select input token (USDC/EURC/USYC)
2. Enter amount → See real-time quote
3. Adjust slippage tolerance (0.1%, 0.5%, 1.0%)
4. Click "Swap" → Approve token (if needed) → Execute swap

5. See confetti celebration on success

**Features:**

- Real-time price quotes via Router contract
  - USD value display for amounts
  - MAX button for full balance swaps
  - Price impact indicator (green/yellow/red)
  - Network fee display
  - Slippage tolerance settings
  - Token switcher with flip animation
- 

## 2. XyloBridge (Cross-Chain)

**User Journey:**

1. Connect wallet → Select destination chain
2. Enter USDC amount → See estimated output
3. Click "Bridge" → Approve USDC → Execute bridge
4. Wait for Circle attestation (~30 seconds)
5. USDC automatically arrives on destination chain

**Features:**

- Chain selector with official logos
  - Fast transfer mode (~30 seconds)
  - Step-by-step progress indicator
  - Real-time status updates
  - Auto-delivery via Bridge Kit
  - Estimated fees and time display
- 

## 3. XyloPools (Liquidity Provision)

**User Journey:**

1. View available pools → See TVL, APY, your position
2. Click "Add" → Enter token amounts
3. Approve tokens (if needed) → Add liquidity
4. Receive LP tokens representing pool share
5. Earn 0.04% of all trades

**Features:**

- Pool analytics (TVL, 24h volume, fees)
  - Your LP position and share percentage
  - Add/remove liquidity modals
  - Real-time reserve data
- 

## 4. XyloVault (Yield Generation)

**User Journey:**

1. View vault stats → See TVL, APY, your position
2. Click "Deposit" → Enter USDC amount
3. Approve USDC → Execute deposit

4. Receive xyUSDC vault shares
  5. Earn auto-compounding yield

## Features:

- Real-time APY display (calculated dynamically)
  - Your position value in USDC
  - Deposit/withdraw modals
  - Strategy description

# Deployed Infrastructure

## XyloNet Contracts

Contract	Address	Explorer Link
XyloFactory	0x60EDeFB094B84BBC6430cc130B358A43Ba1979e2	<a href="#">View</a>
XyloRouter	0x73742278c31a76dBb0D2587d03ef92E6E2141023	<a href="#">View</a>
XyloBridge	0xf7Df65Ce418E938ee8d9a0A0d227A43441fe4641	<a href="#">View</a>
XyloVault	0x240Eb85458CD41361bd8C3773253a1D78054f747	<a href="#">View</a>
USDC-EURC Pool	0x3DF3966F5138143dce7a9cFDdC2c0310ce083BB1	<a href="#">View</a>
USDC-USYC Pool	0x8296cC7477A9CD12cF632042fDDc2aB89151bb61	<a href="#">View</a>

## Arc Network Native Contracts

Contract	Address	Purpose
USDC (Native)	0x36000	Native stablecoin
EURC	0x89B50855Aa3bE2F677cD6303Cec089B5F319D72a	Euro stablecoin
USYC	0xe9185F0c5F296Ed1797AaE4238D26CCaBEadb86C	Yield-bearing stablecoin
TokenMessengerV2	0x8FE6B999Dc680CcFDD5BF7EB0974218be2542DAA	CCTP V2 messenger
MessageTransmitterV2	0xE737e5cEBEEBa77EFE34D4aa090756590b1CE275	CCTP V2 transmitter
Gateway Wallet	0x0077777d7EBA4688BDeF3E311b846F25870A19B9	Fiat on/off ramp
FxEscrow	0x1f91886C7028986aD885ffCee0e40b75C9cd5aC1	StableFX escrow
Permit2	0x00000000022D473030F116dDEE9F6B43aC78BA3	Gasless approvals
Multicall3	0xcA11bde05977b3631167028862bE2a173976CA11	Batch calls

## Network Configuration

Parameter	Value
Network Name	Arc Testnet

Chain ID	5042002
RPC URL	<a href="https://rpc.testnet.arc.network">https://rpc.testnet.arc.network</a>
WebSocket	wss://rpc.testnet.arc.network
Block Explorer	<a href="https://testnet.arcscan.app">https://testnet.arcscan.app</a>
Currency	USDC
Block Time	<350ms

## Integration Guide

### Quick Start

```
# Clone repository
git clone https://github.com/Panchu11/XyloNet.git
cd XyloNet

# Install frontend dependencies
cd frontend
npm install

# Start development server
npm run dev
```

### Contract Integration (JavaScript/TypeScript)

```
import { createPublicClient, http } from 'viem';
import { CONTRACTS, ARC_NETWORK } from './config/constants';
import { XYLO_ROUTER_ABI } from './config/abis';

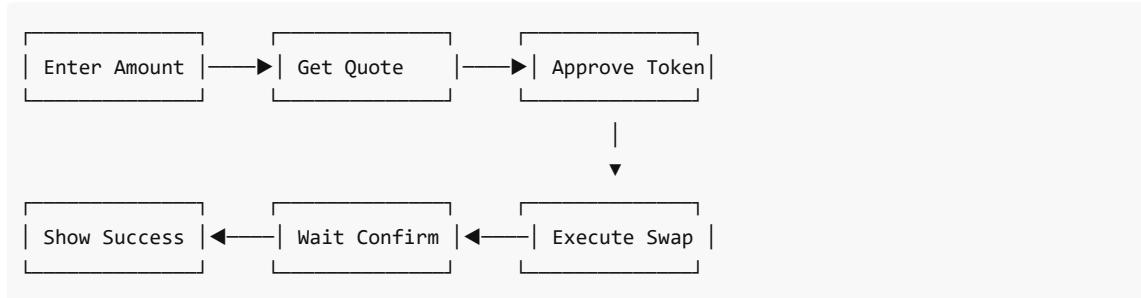
// Create client
const client = createPublicClient({
  chain: {
    id: 5042002,
    name: 'Arc Testnet',
    rpcUrls: { default: { http: ['https://rpc.testnet.arc.network'] } }
  },
  transport: http()
});

// Get swap quote
const quote = await client.readContract({
  address: CONTRACTS.ROUTER,
  abi: XYLO_ROUTER_ABI,
  functionName: 'getAmountOut',
  args: [CONTRACTS.USDC, CONTRACTS.EURC, parseUnits('100', 6)]
});
```

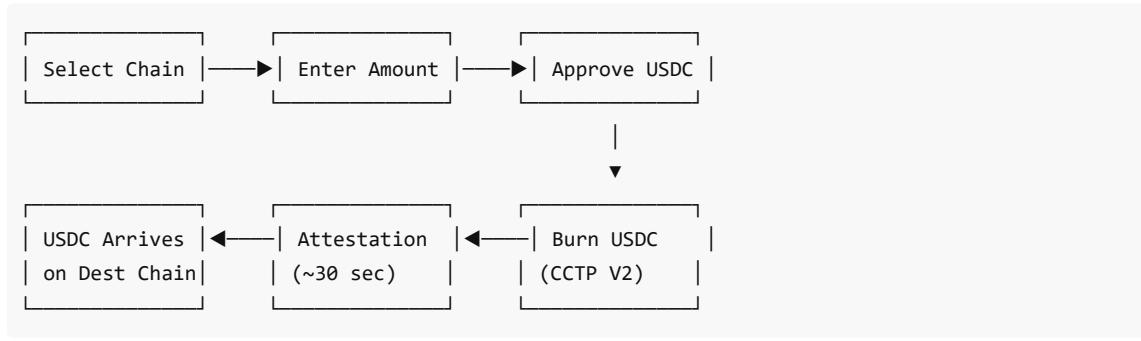
```
// Execute swap
const hash = await walletClient.writeContract({
  address: CONTRACTS.ROUTER,
  abi: XYLO_ROUTER_ABI,
  functionName: 'swap',
  args: [
    {
      tokenIn: CONTRACTS.USDC,
      tokenOut: CONTRACTS.EURC,
      amountIn: parseUnits('100', 6),
      minAmountOut: quote * 99n / 100n,
      to: userAddress,
      deadline: BigInt(Math.floor(Date.now() / 1000) + 3600)
    }
  ]
});
```

## User Flows

### Swap Flow



### Bridge Flow



## Security Model

### Smart Contract Security

Safeguard	Implementation
Reentrancy Protection	lock modifier on all state-changing functions

CEI Pattern	Checks-Effects-Interactions ordering
Access Control	Owner-only for sensitive operations
Deadline Validation	All trades require valid deadline
Minimum Output	All swaps enforce minAmountOut
Zero Address Checks	Validate all address parameters
Safe Math	Solidity 0.8+ built-in overflow checks
Decimal Handling	Proper scaling for 6/18 decimal tokens

## Audit Status

- Internal review completed
  - External audit planned for mainnet launch
- 

# PART B: FUTURE VISION & ENHANCEMENTS

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## Arc Network Deep Analysis

### What Makes Arc Unique

Arc Network is Circle's purpose-built Layer 1 blockchain designed specifically for stablecoin finance. Unlike general-purpose blockchains, Arc is engineered from the ground up for enterprise-grade stablecoin applications.

### Core Technical Features

Feature	Description	Benefit
<b>USDC Native Gas</b>	Pay transaction fees in USDC, not volatile crypto	Predictable costs for businesses
<b>Malachite Consensus</b>	BFT consensus with sub-second finality	<350ms deterministic settlement
<b>Opt-in Privacy</b>	Trusted Execution Environments (TEEs) for shielded transactions	Compliance-friendly confidentiality
<b>3,000+ TPS</b>	High throughput with potential for 10,000+ TPS	Enterprise scalability
<b>EVM Compatible</b>	Full Ethereum JSON-RPC support	Easy developer adoption

## Circle Ecosystem Integration

### Circle Payments Network (CPN)

- Global money movement infrastructure
- Real-time cross-border payments
- Operational rules for compliance
- Partner network for liquidity

### **Circle StableFX**

- Institutional-grade FX engine
- Request for Quote (RFQ) execution
- 24/7 trading of stablecoin pairs (USDC ↔ EURC)
- Payment-versus-Payment (PvP) settlement
- No prefunding required

### **Circle Gateway**

- Chain-abstracted USDC balances
- Deposit USDC on any chain
- Instant access on destination chains
- Eliminates manual bridging

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## **Gap Analysis: What We're Missing**

### **Current vs. Potential Arc Feature Utilization**

Arc Network Feature	Current Use	Potential
USDC Native Gas	✓ Full	Already optimized
Sub-second Finality	✓ Full	Already leveraged
CCTP V2 Bridge	✓ Full	Working implementation
USDC Token	✓ Full	Core asset
EURC Token	✓ Full	Used in pools
USYC Token	⚠ Partial	Needs yield strategies
Permit2	⚠ Partial	Need gasless approvals
Multicall3	⚠ Partial	Could batch more calls
FxEscrow (StableFX)	✗ None	RFQ for large trades
Gateway Wallet	✗ None	Chain abstraction
Account Abstraction	✗ None	Gasless transactions

---

## **Proposed Enhancements**

### **Enhancement 1: StableFX RFQ Integration**

**Priority: CRITICAL | Arc Builders Fund Vertical: FX**

Circle StableFX is an institutional-grade FX engine that provides Request for Quote (RFQ) execution with Payment-versus-Payment (PvP) settlement on Arc.

#### **Why It Matters:**

- Large trades (>\$10,000) get better rates via RFQ than AMM
- Institutional users expect RFQ functionality

- Direct alignment with Arc Builders Fund "FX" vertical
- First-mover advantage on Arc

#### **Technical Flow:**

1. User requests quote from StableFX API
2. Quote returned with rate and expiry
3. User signs EIP-712 trade intent
4. User signs Permit2 funding authorization
5. Trade settled atomically via FxEscrow

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### **Enhancement 2: Account Abstraction (Gasless Transactions)**

#### **Priority: HIGH | Arc Builders Fund Vertical: Enterprise Ready**

ERC-4337 smart contract wallets that enable gasless transactions, session keys, and advanced wallet features.

#### **Why It Matters:**

- Users don't need to hold USDC for gas
- Reduces onboarding friction
- Enables automated transactions
- Better UX than traditional EOA wallets

#### **Supported Providers on Arc:**

Provider	Purpose
<b>Pimlico</b>	Bundler + Paymaster infrastructure
<b>ZeroDev</b>	Smart account SDK

#### **Features Enabled:**

- Sponsored Transactions: XyloNet pays gas for users
- Session Keys: Automated trading without repeated approvals
- Social Login: Connect with Google, Apple, etc.
- Batch Transactions: Approve + Swap in one click

---

### **Enhancement 3: Permit2 Gasless Approvals**

#### **Priority: HIGH | Arc Builders Fund Vertical: Enterprise Ready**

A universal approval mechanism that allows signature-based token approvals instead of on-chain approve() calls.

#### **Why It Matters:**

- One-time approval to Permit2 contract
- All future transfers use off-chain signatures
- Reduces gas costs
- Better UX - "Sign once, swap forever"

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### **Enhancement 4: Prediction Markets**

#### **Priority: HIGH | Arc Builders Fund Vertical: Capital Formation**

The Arc Builders Fund explicitly calls out "prediction markets" as a target vertical under "Always-on Markets & Capital Formation."

#### Market Types:

Market Type	Description	Example
Binary	Yes/No outcomes	"Will BTC hit \$100K by Q1 2026?"
Scalar	Range of values	"What will EURC/USDC rate be on Jan 1?"
Categorical	Multiple outcomes	"Which chain will have highest TVL?"

#### Features:

- Market browser with categories
- Trading interface (buy YES/NO shares)
- USDC-settled
- Oracle integration (Pyth/Chainlink)

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## Enhancement 5: AI Agent Interface (MCP Tools)

### Priority: HIGH | Arc Builders Fund Vertical: Agentic Commerce

The Arc Builders Fund specifically targets "Agentic Commerce" as a priority vertical.

#### MCP Tool Definition:

```
{
  "name": "xylonet",
  "tools": [
    {
      "name": "xylonet_get_swap_quote",
      "description": "Get a quote for swapping between stablecoins",
      "parameters": {
        "tokenIn": "USDC|EURC|USYC",
        "tokenOut": "USDC|EURC|USYC",
        "amountIn": "number"
      }
    },
    {
      "name": "xylonet_execute_swap",
      "description": "Execute a stablecoin swap"
    },
    {
      "name": "xylonet_bridge_usdc",
      "description": "Bridge USDC to another chain"
    },
    {
      "name": "xylonet_deposit_vault",
      "description": "Deposit USDC into vault for yield"
    }
  ]
}
```

```
]  
}
```

#### **Automated Strategies:**

- DCA (Dollar Cost Averaging)
- Rebalancing
- Yield Optimization
- Arbitrage Detection

---

### **Enhancement 6: Limit Orders & Advanced Trading**

**Priority: MEDIUM | Arc Builders Fund Vertical: Markets**

#### **Order Types:**

Order Type	Description
<b>Limit</b>	Execute at specific price
<b>TWAP</b>	Time-weighted average price
<b>Stop-Loss</b>	Execute when price falls
<b>Take-Profit</b>	Execute when price rises

---

### **Enhancement 7: Gateway Integration**

**Priority: MEDIUM | Arc Builders Fund Vertical: Cross-Chain**

Circle Gateway provides chain-abstracted USDC balances.

#### **Why It Matters:**

- No manual bridging needed
- Unified balance across all chains
- Instant access to liquidity
- Better capital efficiency

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### **Enhancement 8: USYC Yield Strategies**

**Priority: MEDIUM | Arc Builders Fund Vertical: Credit Markets**

USYC is a yield-bearing token representing shares in a tokenized money market fund backed by short-duration U.S. Treasury securities.

#### **Proposed Strategies:**

- Auto-Compound USYC Yield
- Yield-Bearing LP (USDC-USYC)
- Dynamic Allocation based on rates

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## **Arc Builders Fund Alignment**

## Priority Verticals (From Official Arc Builders Fund Blog)

### 1. Always-on Markets & Capital Formation

"From perpetuals DEXs and AMMs, to CLOBs, private pools, and prediction markets"

Our Implementation	Status
StableSwap AMM	<input checked="" type="checkbox"/> Live
Prediction Markets	<input type="checkbox"/> Proposed
Limit Orders	<input type="checkbox"/> Proposed

**Alignment Score:** 9/10 (with enhancements)

### 2. Offchain Assets & Credit Markets

"Bringing RWAs and credit markets onchain"

Our Implementation	Status
USYC Integration	<input checked="" type="checkbox"/> Live
USYC Yield Strategies	<input type="checkbox"/> Proposed

**Alignment Score:** 8/10 (with enhancements)

### 3. FX (Foreign Exchange)

"Leverage Circle StableFX to grow onchain FX on Arc"

Our Implementation	Status
USDC ↔ EURC swaps	<input checked="" type="checkbox"/> Live
StableFX RFQ	<input type="checkbox"/> Proposed

**Alignment Score:** 9/10 (with enhancements)

### 4. Agentic Commerce

"AI agents, autonomous infrastructure, machines governing machines"

Our Implementation	Status
MCP Tool Definitions	<input type="checkbox"/> Proposed
REST API for agents	<input type="checkbox"/> Proposed

**Alignment Score:** 8/10 (with enhancements)

## Overall Grant Scoring

Vertical	Current	With Enhancements
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Markets & Capital Formation	6/10	9/10
Credit/RWA	4/10	8/10
FX	5/10	9/10
Agentic Commerce	0/10	8/10
<b>Overall</b>	<b>3.75/10</b>	<b>8.5/10</b>

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## Future Roadmap

### Phase 6: Core Arc Integrations (Proposed)

Feature	Description	Timeline
StableFX RFQ	Integration with FxEscrow for large trades	2 weeks
Account Abstraction	Gasless transactions via Pimlico/ZeroDev	2 weeks
Permit2	Signature-based approvals	1 week
Gateway Integration	Chain-abstacted balances	1 week

### Phase 7: Capital Formation Features (Proposed)

Feature	Description	Timeline
Prediction Markets	Binary outcome markets	3 weeks
AI Agent Tools	MCP definitions + API	1 week
Limit Orders	TWAP, stop-loss, take-profit	2 weeks

### Phase 8: Advanced Optimizations (Proposed)

Feature	Description	Timeline
USYC Strategies	Auto-compound yield vault	2 weeks
Multi-hop Routing	EURC → USDC → USYC paths	1 week
Analytics Dashboard	Real-time protocol stats	2 weeks

### Phase 9: Governance & Token (Proposed)

Feature	Description	Timeline
XYLO Token	Protocol governance token	2 weeks
Staking	Lock XYLO for fee sharing	2 weeks
DAO Governance	On-chain proposal system	2 weeks

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## Technical Specifications

### Gas Estimates (Current)

Operation	Gas Units	Cost (USDC)
Swap	~120,000	~\$0.0012
Add Liquidity	~180,000	~\$0.0018
Remove Liquidity	~150,000	~\$0.0015
Bridge Out	~100,000	~\$0.0010
Vault Deposit	~80,000	~\$0.0008
Vault Withdraw	~90,000	~\$0.0009
Token Approval	~45,000	~\$0.00045

### Performance Metrics

Metric	Value
Block Time	<350ms
Transaction Finality	Deterministic
RPC Response Time	<100ms
Frontend Load Time	<2s
Mobile Compatibility	100%

### Browser Support

Browser	Version	Status
Chrome	90+	<span style="color: green;">✓</span> Supported
Firefox	90+	<span style="color: green;">✓</span> Supported
Safari	14+	<span style="color: green;">✓</span> Supported
Edge	90+	<span style="color: green;">✓</span> Supported
Mobile Safari	iOS 14+	<span style="color: green;">✓</span> Supported
Mobile Chrome	Android 10+	<span style="color: green;">✓</span> Supported

## Competitive Differentiation

### What Makes Enhanced XyloNet Unique

Differentiator	Description

<b>All-in-One Hub</b>	Swap + Bridge + Vault + FX + Prediction + Orders
<b>Arc-Native</b>	Purpose-built, not a fork
<b>StableFX First</b>	First DeFi protocol with RFQ integration
<b>AI-Ready</b>	MCP tools for agentic commerce
<b>Gasless UX</b>	Account abstraction for frictionless trading
<b>Enterprise Grade</b>	Institutional features (RFQ, large trade optimization)

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## Resources

Resource	Link
GitHub Repository	<a href="https://github.com/Panchu11/XyloNet">https://github.com/Panchu11/XyloNet</a>
Live Application	<a href="https://xylonet.xyz">https://xylonet.xyz</a>
Arc Network Docs	<a href="https://docs.arc.network">https://docs.arc.network</a>
Arc Testnet Explorer	<a href="https://testnet.arcscan.app">https://testnet.arcscan.app</a>
Circle Faucet	<a href="https://faucet.circle.com">https://faucet.circle.com</a>
Circle CCTP Docs	<a href="https://developers.circle.com/stablecoins/cctp-getting-started">https://developers.circle.com/stablecoins/cctp-getting-started</a>
Arc Builders Fund	<a href="https://www.circle.com/blog/introducing-the-arc-builders-fund">https://www.circle.com/blog/introducing-the-arc-builders-fund</a>
X (Twitter)	<a href="https://x.com/Xylonet">https://x.com/Xylonet</a>

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## License

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**XyloNet - The Stablecoin SuperExchange for Arc Network**

*Built with ❤ by ForgeLabs for the Arc Network ecosystem*

*Prepared for Arc Builders Fund Application*