THE PIRATE SPACE AGENCY

SCRIPT PAYMENT INFRASTRUCTURE

Scoping Document: From CBS to Cooperative Payment Network

Defines the phased pathway from Community Benefit Society with conventional banking to a sovereign cooperative payment network built on Script, independent of Visa and Mastercard.

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PART I

WHY NOT VISA

Visa and Mastercard are private duopolies that extract rent from every transaction in the modern economy. UK merchants pay 1.5–3% on every card payment. Globally, these two American corporations process over $15 trillion annually and take a cut of each transaction for the privilege of moving numbers between databases.

The extraction is not merely financial. These networks function as private censorship infrastructure. They have unilaterally cut off WikiLeaks, entire adult content platforms, and countries under sanctions. They decide who participates in the economy and who does not. There is no democratic process, no meaningful appeal, and no transparency in these decisions.

For a cooperative structure oriented around post-scarcity, public access, and redistributing power, building permanent dependency on Visa and Mastercard is building on the infrastructure you exist to replace. The Pirate Space Agency requires a sovereign payment rail that is cooperative, transparent, and ungoverned by private American corporations.

That rail is Script.

PART II

WHAT SCRIPT IS

Script is a peer-to-peer transaction protocol forked from NovoBitcoin, itself derived from Bitcoin. It uses the UTXO (Unspent Transaction Output) model, has a 150-second block time, and is released under the Hippocratic Licence, which prohibits use that causes harm.

Inherited capabilities

Script restores the full original Bitcoin opcode set that was disabled by Bitcoin Core developers. This includes OP_CAT, OP_SPLIT, OP_MUL, OP_DIV, OP_MOD, bitwise operations, and shift operations. Script limits are massively raised: 8MB maximum script size, 8 million operations per script, 100MB stack, unlimited pubkeys per multisig. This enables complex smart contracts directly in the scripting layer.

Native token system

Script has a protocol-level token system built into the transaction output structure. Four contract types are supported: FT (fungible token), NFT, FT_MINT, and NFT_MINT. Each transaction output carries contractType, contractID, contractValue, contractMaxSupply, and contractMetadata (up to 1KB). This is not bolted on — it is part of the serialisation format of every transaction.

Stateful scripts

Script supports stateful UTXO contracts via OP_RETURN state encoding. Contract state is appended to the script, parsed on spending, and carried forward in each new transaction. This is the sCrypt pattern: self-enforcing contracts where the money itself contains the rules.

sCrypt integration (planned)

sCrypt is a TypeScript-based smart contract language that compiles to Bitcoin Script opcodes. Script's opcode set is compatible with sCrypt's compilation target. Integration of the sCrypt compiler will enable developers and agents to write complex contracts in TypeScript that enforce spending conditions, wallet policies, and business logic at the consensus layer.

Why UTXO matters for payments

A UTXO either exists and is unspent, or it does not. Authorisation is a binary check against the current UTXO set — it does not require block confirmation. A merchant's node validates the spending conditions locally and accepts the transaction in milliseconds. Block confirmation provides settlement finality, not authorisation. This makes Script faster than Visa for payment authorisation at point of sale.

PART III

PHASED PATHWAY

The pathway from CBS formation to sovereign payment network is staged. Each phase is independently useful and does not require completion of subsequent phases to deliver value.

Phase 1: CBS + Conventional Banking

Status: Immediately actionable

The Pirate Space Agency CBS opens a business bank account with a cooperative-aligned institution. The Co-operative Bank offers free banking for community organisations with credit turnover under £2m and has an Open Banking developer portal with API access. The CBS operates conventionally: receives member share purchases by bank transfer, pays suppliers, issues invoices with a sort code.

Simultaneously, the CBS applies for sandbox access with an EMI partner (Modulr, Gemba, or Griffin) to prototype API-driven payment automation. Sandbox access is free and allows development and testing without financial commitment.

Deliverables

• CBS business bank account (Co-operative Bank)

• Open Banking API integration for programmatic payment initiation

• EMI sandbox environment for payment automation prototyping

• Agent (OpenClaw on Andromeda) generates invoices and tracks payments via API

Cost

£0 ongoing (Co-operative Bank free banking). EMI sandbox is free. CBS registration £250 + legal costs for rules.

Risk

Minimal. Uses established, regulated infrastructure. No crypto exposure. No novel regulatory territory.

Phase 2: Script as Internal Ledger

Status: Requires Script daemon running independently

Script runs as the internal accounting layer for the CBS. Every fiat transaction the CBS makes is mirrored on Script. Community shares are represented as Script FTs (fungible tokens) using the native token system. The blockchain is the source of truth for member balances, share ownership, and transaction history.

Externally, nothing changes. Members buy shares with bank transfers. Merchants receive GBP. The Script layer is invisible to anyone who does not choose to look.

Technical requirements

• Script daemon running on at least two nodes (Andromeda + one additional)

• New genesis block with PSA-specific timestamp

• Seed nodes operated by CBS trustees

• FT contract for community shares: contractType = CONTRACT_FT, contractMetadata = share class and terms

• Bridge service: fiat arrives in CBS bank account → Script FT issued to member's wallet

Deliverables

• Independent Script network with CBS-operated nodes

• Community shares on-chain as native FTs

• Member wallet (initially CLI, later mobile app)

• Transaction transparency: any member can verify the ledger

Cost

Infrastructure: two low-cost servers or existing hardware (Andromeda + one VPS). No ongoing fees beyond hosting.

Risk

Technical risk in running a small blockchain network. Mitigated by the cooperative trust model — nodes are operated by known CBS trustees, not anonymous miners.

Phase 3: QR Code Payments

Status: Buildable once Phase 2 is operational

The first direct payment rail. Merchants display a QR code (static or dynamic with amount encoded). The customer scans with the PSA wallet app. The payment is a Script transaction: customer's UTXO is spent to the merchant's address. The merchant's node validates against the UTXO set — sub-second authorisation, no block wait required.

For merchants who want GBP settlement, the CBS treasury converts Script to GBP via the EMI partner and settles to the merchant's bank account via Faster Payments. The CBS charges a minimal operational fee — fractions of a percent, not 1.5–3%.

Technical requirements

• Android wallet app (React Native or native Kotlin)

• QR code encoding standard (BIP21-compatible with Script URI scheme)

• Merchant POS app (tablet or phone-based)

• CBS treasury settlement service: Script → GBP via EMI Open Banking API

Pilot

Open Space Conference 2026, 17 July, Manchester. Attendees receive a small Script balance. Conference merchandise sold via QR code payment. Friendly audience, controlled environment, real-world test.

Cost

Development: wallet app and merchant POS. Settlement: EMI transaction fees (pence per transaction).

Risk

Adoption risk. Mitigated by starting with a captive, enthusiastic audience (OSC attendees, HacMan community, Manchester maker scene).

Phase 4: sCrypt Smart Contracts

Status: Requires sCrypt compiler integration with Script

Smart contracts move from concept to enforcement. Agent wallet policies are sCrypt contracts on UTXOs: spending limits, approved recipients, daily caps, multi-signature thresholds. The money itself enforces the rules — no API, no server, no intermediary.

CBS governance contracts: community share issuance, dividend distribution, voting on resolutions — all encoded in sCrypt, compiled to Script opcodes, enforced at the consensus layer.

Agent commerce

The OSA (Open Spaceplane Architecture) agent harness operates on Script. Agents earn Script for completed work. Spending is governed by sCrypt contracts: per-transaction limits, daily caps, approved recipients, shutdown threshold. When the agent's balance falls below the sCrypt-enforced floor, the UTXO cannot be spent — the agent shuts down by protocol, not by policy.

Deliverables

- sCrypt compiler validated against Script's opcode set
- Standard contract library: wallet policy, multisig, timelock, escrow
- Agent wallet contracts with hard spending limits
- CBS governance contracts for share issuance and voting

Phase 5: NFC and Terminal Integration

Status: Medium-term, requires terminal manufacturer or HCE partnerships

Script becomes a tap-to-pay network. Android phones use Host Card Emulation (HCE) to present a Script payment via NFC. The terminal recognises the Script Application Identifier (AID) and routes the transaction to the Script network instead of Visa or Mastercard.

For terminals that do not support the Script AID, the wallet falls back to Visa/Mastercard via the EMI partner's virtual card. Over time, as more merchants join the cooperative network, the fallback is used less.

Dual-network cards

For CBS members who want physical plastic, the EMI partner issues a dual-AID card: Script-native on supporting terminals, Visa/Mastercard fallback elsewhere. The card is branded Pirate Space Agency.

Requirements

- Script AID registration (Application Identifier for NFC routing)
- HCE implementation in the Android wallet app
- Terminal software partnerships or POS app that speaks Script natively
- EMI partner for dual-network card issuance

Phase 6: Mesh Network Payments

Status: Long-term, builds on physical-reality-as-hypermedia protocol

Script transactions over Meshtastic ESP32 mesh radios. Two people at a field market with no mobile signal, no WiFi, no internet can transact. The wallet app communicates via the mesh radio, the transaction propagates node to node, and when a node reaches the internet it syncs with the wider Script network.

Settlement finality may take hours in a fully off-grid scenario, but the UTXO model means the transaction is valid the moment it is cryptographically signed. This is the ultimate expression of the payment rail: money that works anywhere packets can move.

Integration with existing infrastructure

• Meshtastic ESP32 nodes (already in development at Supernova Labs)

• NFC cards as mesh-compatible payment instruments

• WebAR overlay for transaction status and wallet management

• Distributed ledger fragments that reconcile when connectivity returns

PART IV

UK EMI LANDSCAPE

The CBS requires an EMI partner for fiat on/off ramp services, card issuance, and Faster Payments access during the transition period. The following providers have been evaluated for suitability.

Provider	Type	Cards	API	Crypto OK	Notes
Co-op Bank	Bank	No	Open Banking	No	Free for CBS. Values-aligned. Start here.
Modulr	EMI (FCA)	Yes	Full REST	No	Enterprise-scale. Custom pricing. No crypto.
Gemba	PI (FCA)	Yes	Full REST	Unknown	SME-friendly. 70% rev share. Cards in 4hrs.
Griffin	Bank (PRA)	Yes	Full REST	Unknown	FSCS protected. Full banking licence.
OpenPayd	EMI	Yes	Full REST	Yes	Multi-currency. May be over-complex.
ClearBank	Bank (PRA)	Via partners	Full REST	Unknown	EMI-specific infra. Bank of England funds.

Recommendation

Start with the Co-operative Bank for the CBS business account (free, values-aligned, Open Banking API). Apply for Modulr or Gemba sandbox access in parallel for payment automation prototyping. Migrate to a full EMI partnership when transaction volume justifies the cost. The Script blockchain runs underneath from day one as the internal ledger, invisible to the EMI.

Critical constraint

Most UK EMIs do not support crypto-related businesses. The Script layer must be invisible to the EMI partner. They process GBP in and GBP out. The blockchain is internal CBS infrastructure, not a customer-facing product. This is a compliance boundary, not a technical one.

PART V

AGENT ARCHITECTURE

The CBS operates autonomous agents via the OSA (Open Spaceplane Architecture) harness running on OpenClaw. Agents handle commercial operations: quoting, invoicing, payment tracking, client communications, and eventually service delivery coordination.

Agent wallet on Script

Each agent has a Script wallet governed by sCrypt spending conditions baked into the UTXO:

- Per-transaction limit (e.g. £1.00)
- Per-day limit (e.g. £3.00)
- Approved recipients whitelist
- Chain restriction (Script mainnet only)
- Approval required above threshold (requires trustee co-signature)
- Shutdown threshold (£0.50 — agent cannot spend below this floor)

Self-sustaining model

Agents earn Script by completing work for clients. Clients pay in GBP via bank transfer to the CBS. The CBS issues equivalent Script to the agent's wallet. The agent pays for inference and operational costs from its Script balance. When the balance hits the shutdown threshold, the sCrypt contract prevents further spending — the agent performs a state dump and halts.

This is not the token-speculation model used by DarkSol/Bankr. Revenue comes from real commercial work for real clients outside the crypto ecosystem. The Script layer is internal plumbing, not a speculative asset.

OSA skill acquisition

The agent uses the osa-acquire meta-skill to extend its own capabilities. When it encounters a task it cannot perform, the gap detector identifies the missing skill, osa-acquire drafts and validates a new skill, and the next harness cycle can execute it. The agent's capability envelope expands with its client base, bounded by the harness invariants: progress contracts, kernel-tier protection, acquisition isolation.

Inference

The agent routes inference to the cheapest suitable API (Anthropic Haiku, OpenRouter, or local models where hardware permits). Inference costs are paid from the agent's Script balance. The CBS negotiates API access as a corporate customer, potentially at volume discount.

PART VI

GOVERNANCE AND TRUST

The payment network is cooperative, not adversarial. This changes the trust model fundamentally.

Network governance

Script nodes are operated by CBS trustees and member organisations. The network is not secured by anonymous proof-of-work mining competing for block rewards. It is secured by known, accountable parties who have a cooperative relationship with each other and with the CBS membership.

The consensus mechanism for the production network is an open design question. Options include: retaining proof-of-work with a lightweight algorithm accessible to consumer hardware (aligning with post-scarcity values), proof-of-authority with CBS trustees as validators, or a federated model with partner organisations (HacMan, university partners, Westcott) as validator nodes.

Dispute resolution

In the Visa/Mastercard model, the card network provides dispute resolution via chargebacks. In the Script model, the CBS fulfils this role. Members can raise disputes with the CBS board. Smart contracts can encode escrow and conditional release for high-value transactions. The CBS's cooperative governance structure — one member one vote, elected board, transparent accounts — provides democratic accountability that Visa and Mastercard do not.

The Hippocratic Licence

Script is released under the Hippocratic Licence: software may not be used to cause harm. This is a legal and philosophical commitment. Any entity building on Script — including the CBS itself — is bound by this constraint. It prevents the construction of extractive fee structures, weapons systems integration, surveillance infrastructure, or any application that violates the core principle: first, do no harm.

PART VII

INDICATIVE TIMELINE

Phase	Milestone	Earliest	Dependency
1	CBS bank account live	Q3 2026	CBS registration
1	EMI sandbox access	Q3 2026	Application
2	Script independent network	Q3–Q4 2026	Genesis block, nodes
2	Community shares on-chain	Q4 2026	FT contract, bridge
3	QR payments pilot (OSC)	17 July 2026	Wallet app, POS app
3	Merchant settlement live	Q4 2026	EMI partnership
4	sCrypt contracts live	Q1 2027	Compiler integration
4	Agent wallets on Script	Q1 2027	sCrypt + OSA harness
5	NFC tap-to-pay pilot	2027	HCE, AID registration
5	Dual-network cards	2027–2028	EMI card programme
6	Mesh payments pilot	2028+	Meshtastic integration

Note: The OSC 2026 QR payments pilot (Phase 3) is aspirational and depends on the Script daemon and wallet app being ready by mid-July. If not achievable, Phase 3 moves to a later community event without affecting the other phases.

PART VIII

CLOSING

The East India Companies had royal charters. The modern payment networks have Visa and Mastercard. Both are monopoly instruments that concentrate power and extract rent from the commons.

The Pirate Space Agency is the counter-monopoly. A cooperative payment network, governed by its members, enforced by cryptography, released under a licence that prohibits harm. It does not ask permission from Visa. It does not need Mastercard's approval to move money. It builds the rail and invites people to use it.

The technology exists. The legal structure exists. The community exists. What remains is the work.

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