WhisperCash

www.whispercash.com

OFFLINE CBDC

PRODUCT BROCHURE

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The First Fully Offline CBDC

WhisperCash is the first fully offline Central Bank Digital Currency that has the same properties as physical cash

It is capable of performing secure consecutive offline payments without any connectivity, and without compromising on security, privacy or accessibility

WhisperCash has been designed to be as close to cash as possible. It holds the highest security standards, with high availability with no single point of failure. It also guarantees the ability to truly balance privacy and transparency.

WhisperCash is designed to perfectly complement the current monetary infrastructure

WhisperCash money is minted by the Central Bank and distributed by trusted Authorized Financial Institutions (AFIs) such as Commercial Banks, Payment Service Providers (PSPs), etc. Monetary policy can be enforced in real time whenever a consumer makes a transaction with a merchant, goes online,
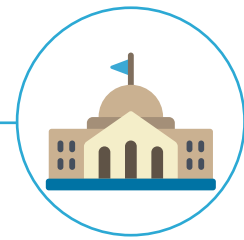
Central Bank Governance

WhisperCash can be integrated with online services and platforms, including embedded IoT devices with low-bandwidth communication channels such as satellite or LPWAN networks. Even though it's been designed to be operated offline, it can easily bridge to online web shops, servers and terminals.
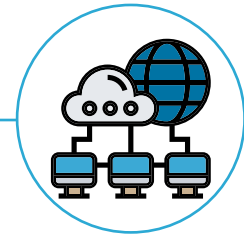
Interoperability

WhisperCash can inherently function as a standalone offline CBDC that requires no backend systems or specialized servers run by the Central Bank.

However, WhisperCash can also offer hybrid CBDC solutions based on traditional server infrastructure or Distributed Ledger Technology via our industry partners
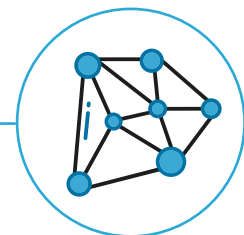
Infrastructure

How we achieve privacy and security

WhisperCash has been designed from scratch as a digital alternative to physical cash, thus the privacy design depends less on the technology and more on laws and regulations. Because of its offline nature WhisperCash is inherently very privacy-friendly, and quite flexible on the privacy design.

DIRECT PERSON-TO-PERSON TRANSACTIONS

WhisperCash allows direct person to person offline payments without any server infrastructure or internet connectivity. Payments are sent and received by way of exchanging 10 digit authorization codes between users. During transactions, no personally identifiable information is exchanged, the payer and payee are only identified by their 16-digit numeric wallet IDs

TOP OF THE LINE ENCRYPTION MECHANISM

Each wallet/card is assigned an identity and provisioned at the factory with a unique Elliptic Curve based key. An Identity Based Key Agreement protocol coupled with a Double Ratchet mechanism (similar to Signal or WhatsApp's E2E encryption mechanism) allows two cards to establish a shared unique key per transaction that is used to generate and verify the 10 digit signature for the payment

KYC, AML & CASH CONTROL COMPLIANCE

Distribution of the cards is done by Authorized Financial Institutions and Trusted Partners. These can be Commercial banks, Payment Service Providers or even the local grocery shop. Each wallet/card is registered and issued to their owner by KYC procedures. In addition, each card contains an internal application called The Policy Enforcer that reads, analyzes and filters transactions in real time. This application enforces AML and Cash Control policies, and can be further customized for your jurisdiction

LATEST TAMPER-RESISTANT HARDWARE SECURITY

Double spending is actively prevented by the WhisperCash software, and the physical tamper-resistance prevents the extraction of private keys or unauthorized changes to on-card policies or balance. The Secure Element chips are FIPS 140-2 Level 3 and CC EAL 6+ certified

Payment Methods

WhisperSend©

a unique way to make payments by communicating 10 digit codes between the sender and the recipient in person, over the phone, or even in writing. The 10 digit code is a self-contained transaction, generated from the sender's WhisperCash smartcard wallet, and then given to the recipient to input in their respective smartcard wallet. The recipient does not have to input the code immediately, they can store it for later and it will still be functional. The code can be transmitted to the recipient by any method of communication (such as bluetooth, email, physical mail, fax), however WhisperSend is especially useful for in-person transactions because the code can be transmitted via word-of-mouth as well.
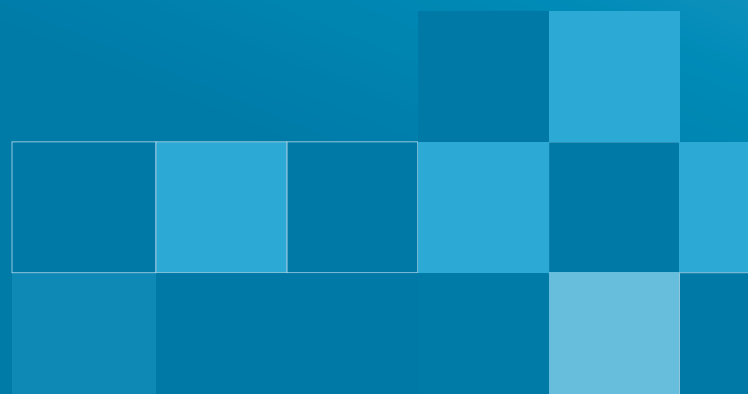
We also support:

Bluetooth

**Contactless NFC**

SMS

QR Codes

Satelite

Our Personal Wallet Products

WhisperCash PRO

Payment methods supported:

- **Bluetooth**
- **Contactless / Tap to Pay (NFC)**
- **QR Codes**
- **WhisperSend (10 digit codes)**

It is battery powered and lasts for 2 weeks between recharges assuming a few transactions per day. WhisperCash Pro cards are self-contained CBDC wallets in a card form factor; they do not need an external reader or terminal to operate. An on-card eInk screen and capacitive keyboard are used to drive the user interaction.
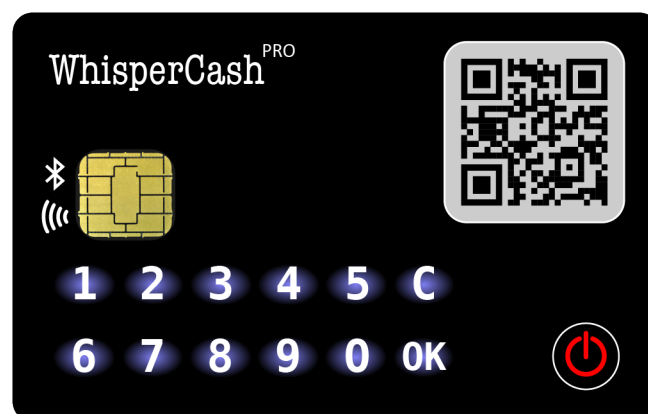
WhisperCash Basic SIM Sticker

Payment methods supported:

- **SMS**
- **WhisperSend (10 digit codes)**
- **QR Codes**
- **NFC via the smartphone**
- **Bluetooth (Android only)**

This is a SIM Card sticker that attaches to the SIM card of any mobile phone - Android, iPhone or feature-phone. Once attached to the SIM, it can be controlled by a mobile app (Android only) or by the SIM Toolkit builtin phone application (on feature phones and iPhones)

WhisperCash LITE

Payment methods supported:

- **Contactless**

The WhisperCash Lite offers the biggest convenience for users. It is a keyring tag that can be tapped to contactless readers in shops or to the user's own NFC-capable phone for balance verification or top-up. This has proven to work really well for public transit tickets such as the Oyster Card in London, and similar systems throughout the world.

Products for Merchants

FAMOCO SE CHIP TERMINALS

We have partnered with Famoco to offer terminals with SE chips inside to work seamlessly with our cards and tags. With the latest security features available, the merchants would be able to accept WhisperCash products as a payment option with super quick setup. There are a variety of affordable terminals and leasing plans available
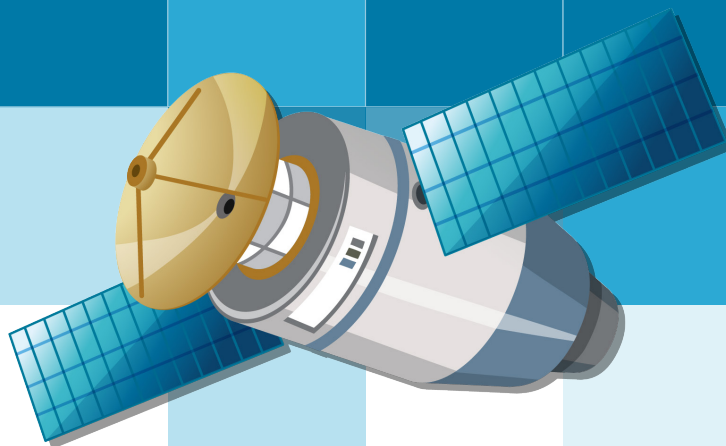
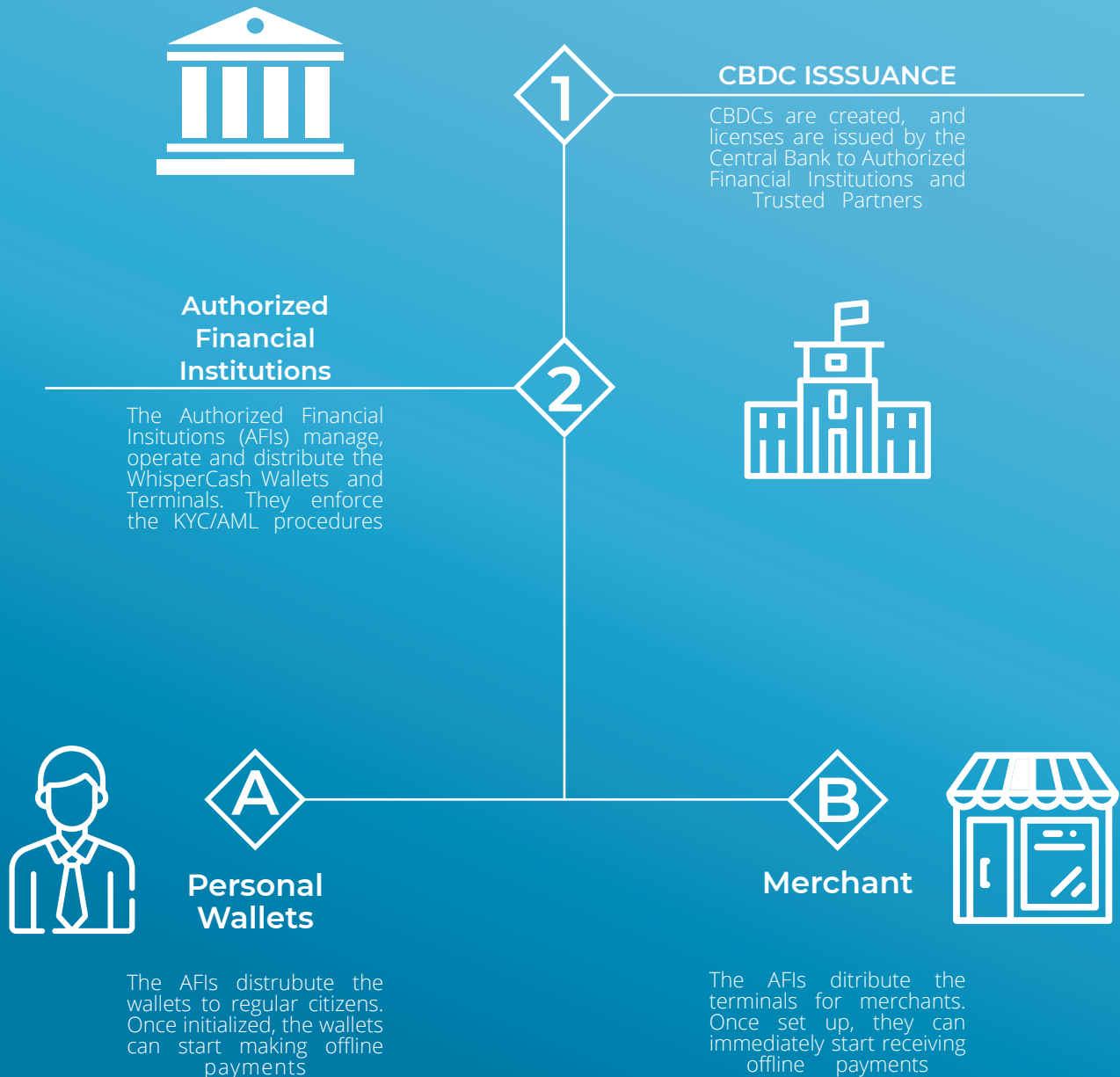## WhisperCash Satellite Stations - making transactions over satellite networks

We've built the WhisperCash Satelite Stations in order to ensure the payment infrastructure never gets interrupted, **no matter what happens**, whether it be hurricanes or alien invasion
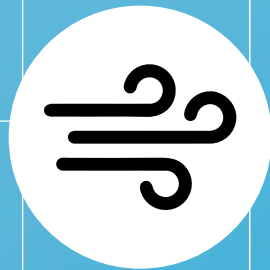
The WhisperCash Satellite Stations are small terminals that can be hosted by Authorized Financial Institutions or Merchants in order for citizens to make long-range transactions when other networks are down such as internet or the telecommunications.

The WhisperCash Satellite Stations can also be used as standalone merchant terminals or syncronisation devices in really remote areas where electricity, telecommunication networks and internet are scarce. They can draw their electricity from solar panels and are low maintenance.

CBDC Issuance in Practice

1

CBDC ISSSUANCE

CBDCs are created, and licenses are issued by the Central Bank to Authorized Financial Institutions and Trusted Partners

Authorized Financial Institutions

2

The Authorized Financial Insitutions (AFIs) manage, operate and distribute the WhisperCash Wallets and Terminals. They enforce the KYC/AML procedures

A

Personal Wallets

The AFIs distrubute the wallets to regular citizens. Once initialized, the wallets can start making offline payments

B

Merchant

The AFIs ditribute the terminals for merchants. Once set up, they can immediately start receiving offline payments

WhisperCash

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