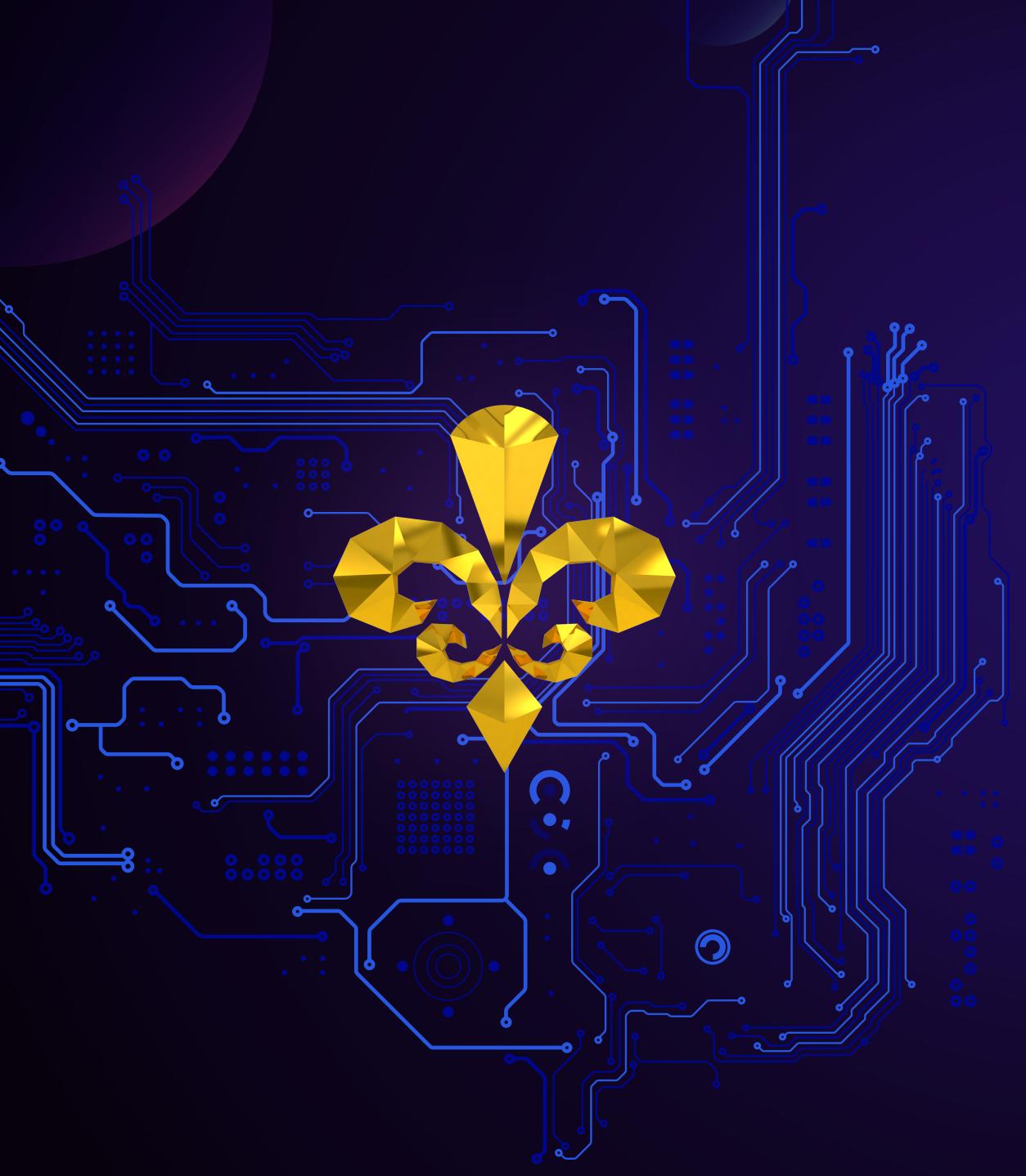




SMART CARD

FIRST SMARTCARD BRIDGING DIGITAL & REAL WORLD



There are several ways to use **the OZT card**, and this paper is presenting an approach and module by which one **OZT card** can communicate with the other.

The Near Field Communication (NFC) technology included enabling transfer from payer's Exchange account to payee's Exchange by digital means.

The ultimate purpose of this means of payment is to eliminate the need for physical cash and provide **secure identity verification** while paying in fiat or cryptocurrency.

The use of **biometric authentication** featured in the **OZT card**, increase the security of the transaction and is designed to replace the non-secure digit code of the actual system.

OZT card Smartcard
using biometric authentification and
Bluetooth/NFC/RFID technology for Payment,
P2P transactions and cold storage.



Digital payment is operational for more than 40 years now, and we used to have three different models:

- **JW model**, which is the traditional payment system, where both the sellers and buyers need some involvement for a particular transaction to be realized.
- **N. Asokan model**, introduced in 1998, incorporates the transaction to be processed between the bank and the buyer/seller, in case both of them are not involved in any transaction.
- **The 3rd model** is a generic version of Asokan and has been designed to incorporate the credit card, electronic cash and cheque payment models.



Credit card is the most popular means of payment in our internet area.

But the crisis of 2009 saw the emergence of a new means of payment using the distributed ledger technology commonly called **Blockchain**.

The **Bitcoin** introduces the concept of **cryptocurrency**; it's now possible to send money to anyone across of the word instantly without the need for central banking.

This new financial freedom brought with him a lot of challenges to overcome, like by example the fact of the usage of cryptocurrency for criminal activities on the internet, **Silkroad*** is an example among many.

Along with the cryptocurrency, the introduction of a smartphone creates another payment pipeline, with the success of **IOS** and **Android** the **P2P** took another level (Apple pay, android pay) with the introduction of a new way do to banking. The **mobile payment** introduces a lot of features designed to ease users lives (ticket booking, bills payment, withdraw, wire transfer).



Charles Walton introduced the RFID technology in 1983, and in 1995 the first NFC was implemented in Seoul Bus transport. In 2007 the first bank to add the NFC in their products was Barclay's. We can say that NFC is the next step and is superior to RFID, which uses 13.56 MHZ frequency within less than 10 cm range.

The NFC has three modes of communication:

- **The Reader-Writer method**

In Reader-Writer mode, the preloaded data is read from the embedded chip on the tag or written in the embedded microchip.

- **The P2P mode**

In Peer-to-Peer mode two NFC devices communicate between each other to either share a small data or to create a pairing

- **The Card Emulation mode**

In Card Emulation Mode, the active device emulated as a Smart Card based on different standards.



Today a lot of companies already incorporated the NFC features in their **smartphones**, but a lot of banks also included this technology in their **payment cards**.

The **tokenization** is the faculty to replace actual debit and credit card by one time tokens. The **token** can only be decrypted by the company Server.

In the case of **Point to Point encryption**, all the encrypted data are processed and decrypted, when they arrive at the secure environment . **Apple** was the first in 2014 to come up with this feature, followed by **Android pay** in 2015.



A lot of solutions for electronic exist on the market, but you always need to rely on a smartphone, a wifi connexion or a server Point of sale (POS).

So, we require a **unified payment system** enabling different types of transaction like P2P, POS, and it must be secure and economical compared to standard solutions. Moreover, with the emergence of DLT, this payment system should also allow a cold storage feature and transactions.

The system must also be portable so that the users can carry the device with them to pay to anyone any time, anywhere — **The OZT card** match all those requirements.

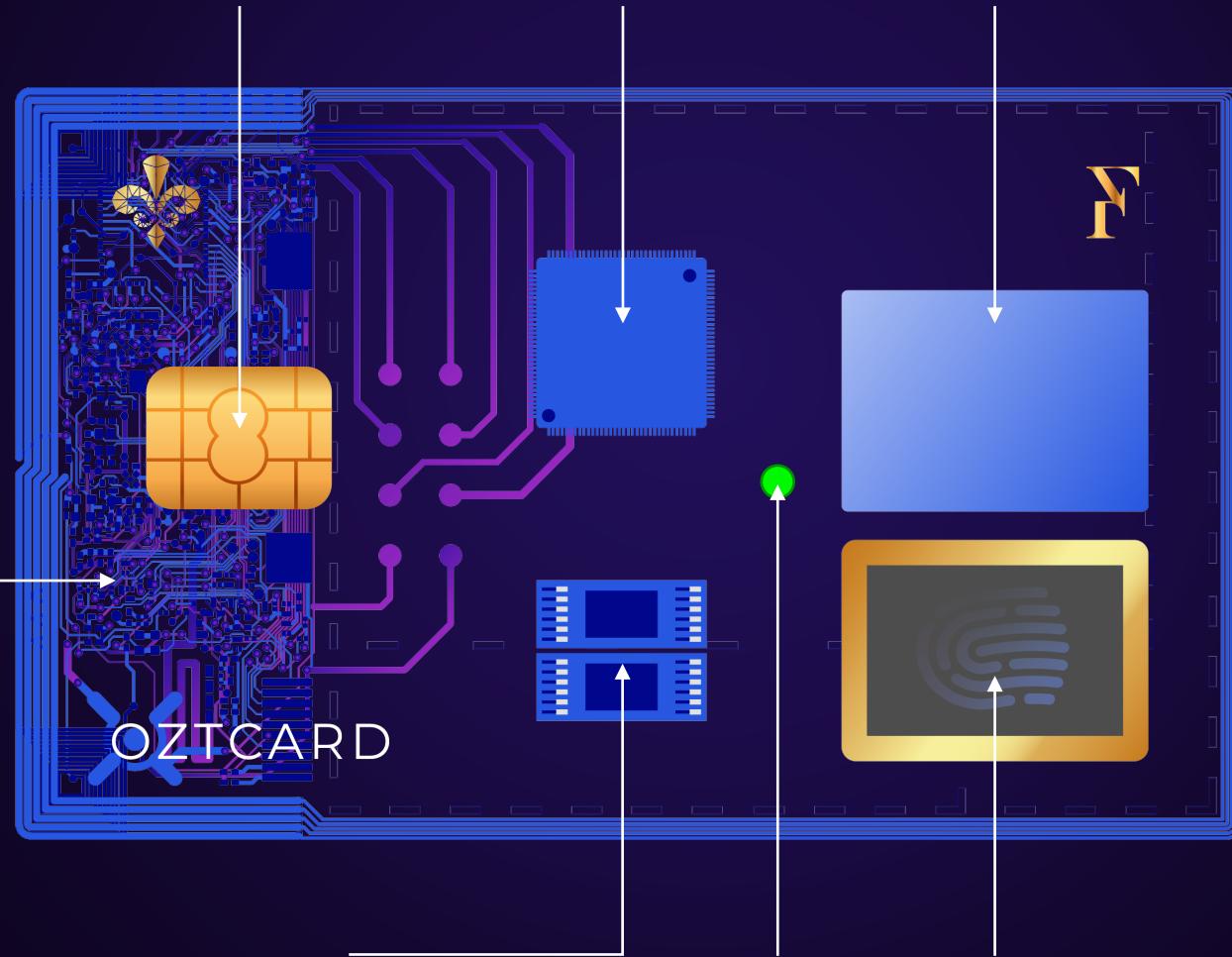


Power
Management

Smartcard
Chip

Powerful ARM
Microprocessor

Screen



Minimum
4GB Memory

LED

Fingerprint
Sensor



Peer-to-peer money transfer using OZT card

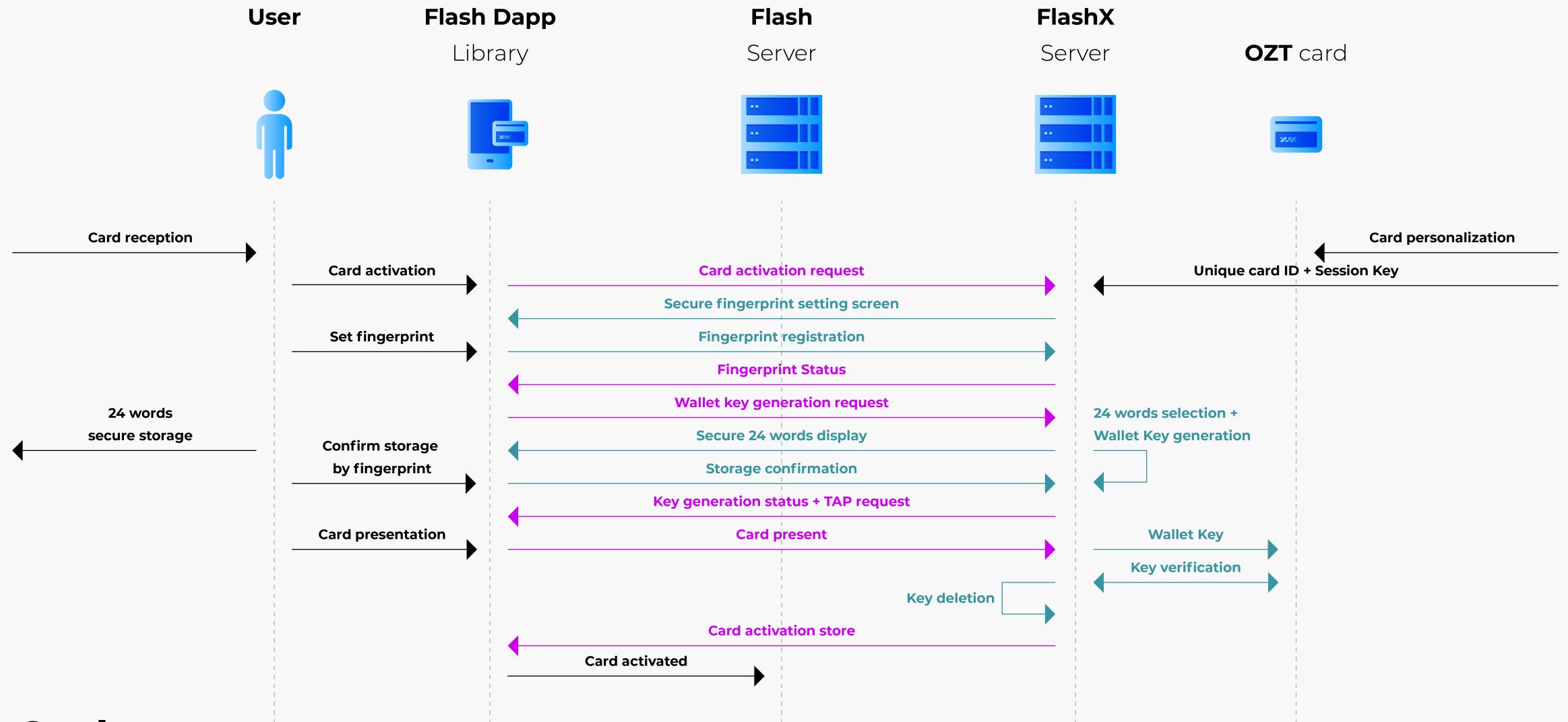
In [the OZT card](#) framework at first, the payee activates his card using his **fingerprint** by holding it until seeing a **white light** popping up, once it will become **green** then the card is chain to user biometric fingerprint. The authentication of the fingerprint leads to card activation (light goes green).

After that, the payer selects the operation that he wants to do. He can choose **all the card tokenized** in the app or **the cryptocurrency** that he want to use, select the amount and validate to send.

The payee selects **receive money** from the module and tap it with one of the senders. So basically this transaction can be done in **OTC mode** using only **NFC** or **online** if both sender and receiver are not in the same area.

If it's in **OTC mode** and the authentication is successful, the **unique ID** of the Payee is transferred to the payer module by **NFC P2P mode**. Otherwise, the transaction will be cancelled.

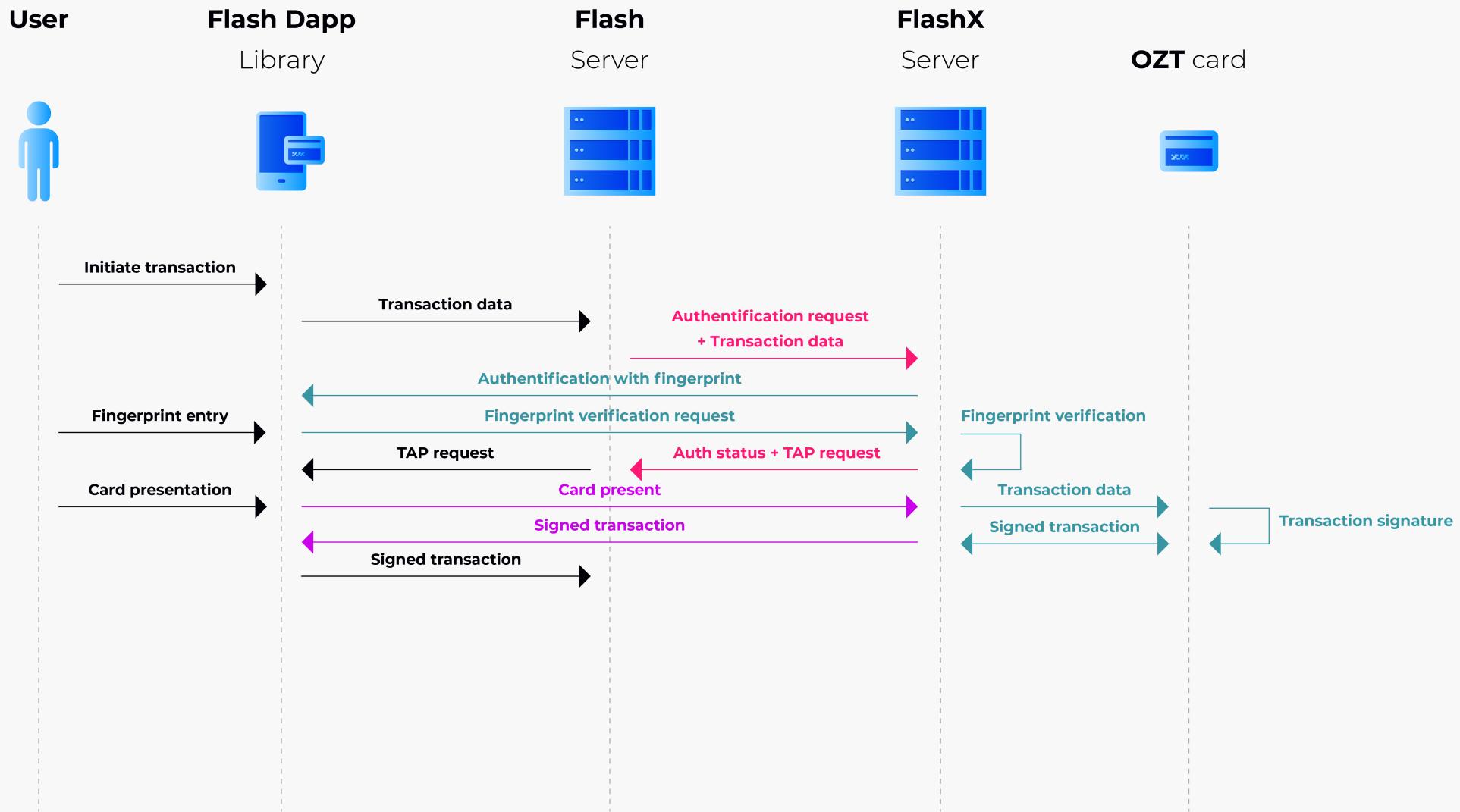
A submission mode can be active in case the sender is being obliged to send funds to the receiver; the system can act like the transactions is successful while it's not.



Card Activation

Mobile SDK library / Internal

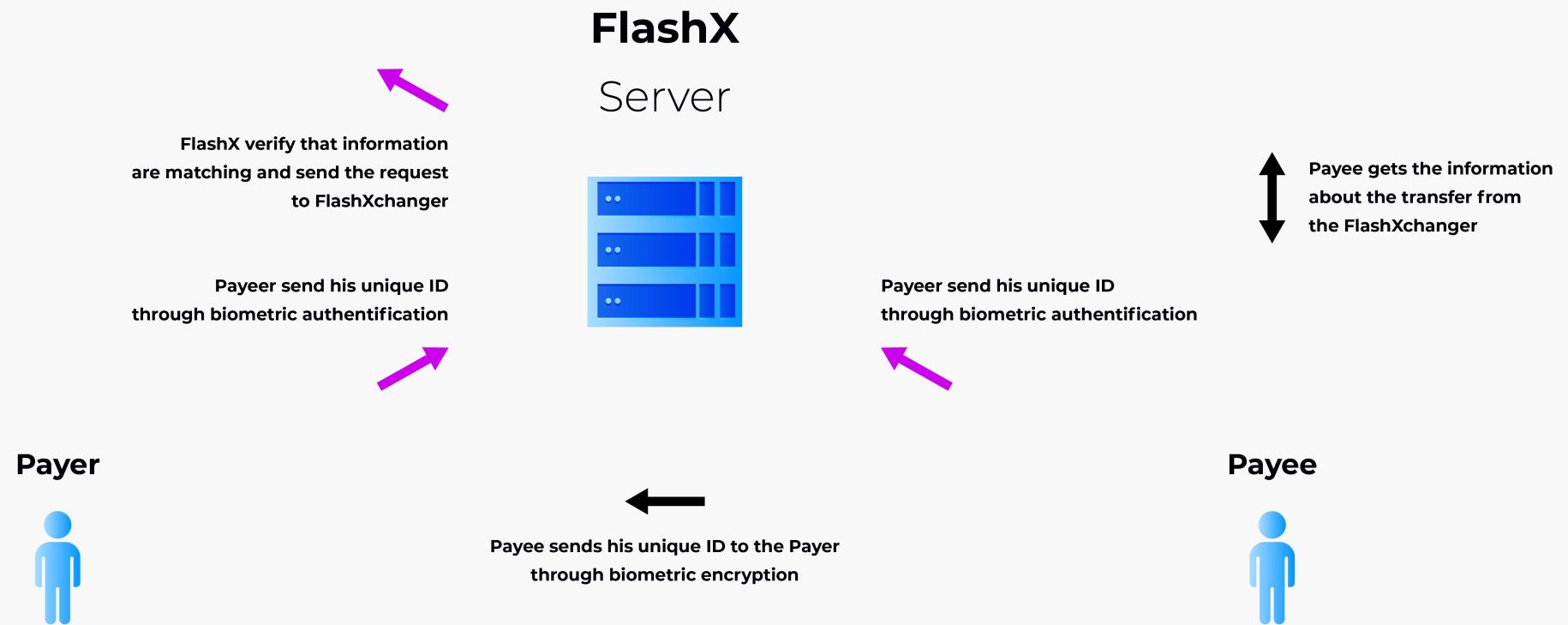
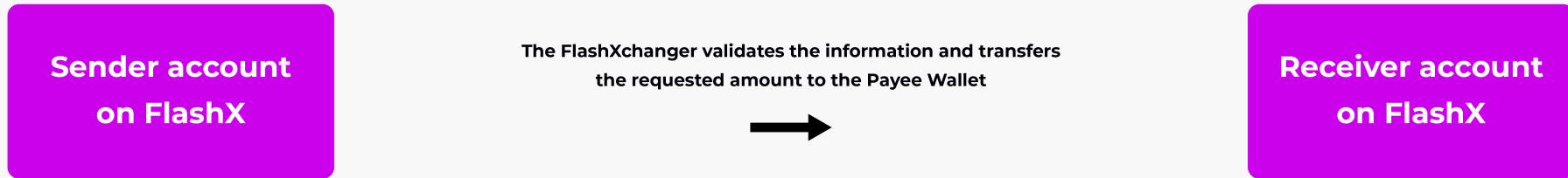
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Transaction Signature

Web Services API / Mobile SDK library / Internal





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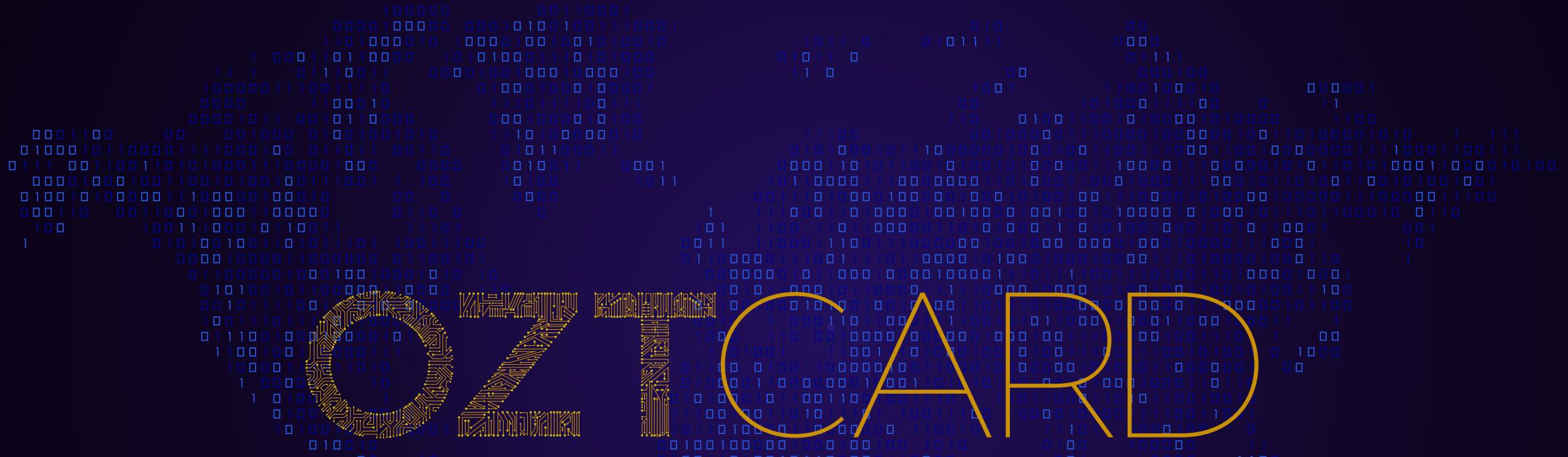


In a world continually changing our solution is designed to enable **financial inclusion** for every human being, banked, unbanked or even over-banked.

The solution is suitable for those who do not have means of payment but also suitable for a user owing or doing:

- credit/debit card
- several bank account
- cryptocurrency
- OTC transactions
- Loyalty card
- ID card (national ID, Driver license)

All of those devices can be gathered under one single device **the OZT card**, moreover, through the app, the user can also access to all his regular bank account through the **OZT app**.



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