ReFun

Kiersten Jowett
kiersten@layoftheland.space
www.layoftheland.space
January 12, 2019

Refun is a blockchain refund function layer that participants voluntarily opt in to. It is ideal for retailers and exchanges but many honest consumers will use it too. You will be able to check, before you send funds to an address, whether or not the receiving wallet is operating under ReFun; the refund layer. You might think twice about sending funds to an address that does not use ReFun.

Why ReFun? Consumer protection.

- It eliminates the need to send a micropayment to an address before sending the real amount to check that it's the correct address.
- It offers a full refund (within the timeframe designated by the receiver at the outset) of the funds if they were sent incorrectly or if there is a problem with the goods.

Who subscribes to ReFun?

- End users subscribe to the ReFun service for their hardware wallet or opt in on an exchange.
- Retailers and exchanges (@xapo, @coinbase, @kraken @coinjar et al) also subscribe to ReFun. Not running it may raise questions about the brand.

To begin, ReFun may be a centralised, opt-in service provided by a middleman (someone like @Ledger could build it and sell it as a service.) But because the source information is digitally native it lends itself, eventually, to being built and running simply as a decentralised, smart contract system.

The front end of ReFun looks like this:

Alice wants to send funds to Bob.

She pastes Bob's address into the "receiving wallet" window (or Bob’s address appears there because Alice has scanned his QR code). Moments later the small grey version of the ReFun logo appears under the receiving wallet window and the words; "You are sending funds to a wallet that is running ReFun". A time also appears (pre-determined by the receiving wallet, in this case Bob's wallet) denoting the window of time the sender (in this case Alice) has to request a refund. If Bob’s wallet does not use ReFun a little red sentence appears under the receiving wallet window; "This address does not provide a refund function."

If Bob is using ReFun and Alice decides to send funds to him, before the funds are sent a terms and conditions window will pop-up on Alice's screen and she will need to read and accept the terms of refund from both ReFun and Bob in order to use the service.

Once Alice has accepted these terms and sent funds to Bob, a red "Refund" button will appear next to her outgoing transaction records for the refund time period

Bob has assigned for this transaction. Initially, ReFun will only allow Bob's wallet to turn "on" and "off" the refund option but further iterations of ReFun will see nuanced options allow receiving wallets, like Bob's, to select different refund options according to quantity of funds, time frames, wallet addresses, IP addresses, etc.

If Alice wants to reverse the transactions (perhaps there is a problem with the goods Alice purchased from Bob or perhaps Bob's address isn't the one she meant to send funds to) Alice simply goes to her outgoing transaction records list where, if the transaction (still) meets the refund criteria set by Bob, the "Refund" button will be red and Alice can click it.

If it is past the agreed refund time frame then the red "Refund" button will be greyed out or gone.

In the case that the "Refund" button is red and Alice clicks it this action will either refund her within the next block or, if there were real world conditions set in the initial terms and conditions (ie refund is only initiated when goods are returned) those will need to be fulfilled and approved by Bob.

Either Alice or Bob will have to pay for the refund to be witnessed. This payment responsibility will be clearly defined in the terms and conditions Alice agrees to before she sends funds to Bob's ReFun covered address.

API LAYER

On the back end of ReFun, the exchange or hardware wallet being used will call the receiving wallet’s address in ReFun’s database and if it is not found it will return the little red sentence alerting the sender: "This address does not provide a refund function." If it is found a message will be sent requesting ReFun’s logo to appear and the statement: "You are sending funds to a wallet that is running ReFun". Or if ReFunc is being used the name of the exchange or retailer will be sent.

REFUNC

Retailers and exchanges will use the next level, more transparent, Refun naming service called ReFunc. ReFunc allows the business name to appear under the "receiving wallet" window allowing the consumer to know the name of the retailer or exchange. A small grey version of the ReFunc logo will also appear under the "receiving wallet" window.

FUND STORAGE

Refunds are not held in escrow or by any third party. They exist in the receiver's wallet. However, the receiver, using ReFun, has given the ReFun smart contract permission to access the same amount of funds they received in order to fulfil the refund; sending the same funds back to the wallet they came from.

Because the funds are not held externally there is a chance the funds can be spent by the receiver before the agreed upon refund period has ended. In the first iteration the receiver is alarmed when they attempt to remove funds from their wallet that will mean they cannot honour a refund. In future iterations, the receiver will be able to control the alarm settings to notify them multi times and at different wallet balance levels.

Refun is not a guarantee of a refund it is simply a refund service tool. Humans are still required to fulfil their obligations.

OTHER NOTES

ReFun can be scaled down to a very simple, mistaken identity refund service or it can be scaled up to a more advanced service including more complex terms and conditions.

Obviously, ReFun has an explorer that shows which addresses operate under it. End users won't necessarily need to visit the explorer; they just need to know they can if they want to.

That's my ReFun white paper sketch.