

How to make a Chiemgauer!

A digital local currency bought with payment cards.
ERC20 compatible.


May 2018

Problem: Can we use Ethereum to make a currency like Chiemgauer, that is easy to buy and sell?

Made at a hackathon organized by
WeOU in Copenhagen

Julian (me) - enthusiast of P2P
technology, and distributed systems.
Coder.

Troels - WeOU

The background is a solid pink color. In the top right corner, there are several overlapping geometric shapes: a dark pink square, a medium pink square, and a light pink square, all partially cut off by the edge of the frame.

In 2003, Christian Gelleri, a high school teacher, started a project with his students...

What is Chiemgauer?

A local currency intended to be used in the Chiemgau region, Bavaria, Germany

1 EUR = 1 Chiemgauer

A central authority prints, sells and buys Chiemgauer

Not a cryptocurrency



“Features” of Chiemgauer

Loans up to 20k in Chiemgauer - without fees

Nonprofits can purchase 100 Chiemgauer at 97 EUR

Demurrage: *Currency circulation tax* of 2% of bank note value per 3 months



Gültig nur mit Original-Unterschrift und Pragemarke

Fochler

Fochler

Geller

Geller

2

547089



Chiemgauer

Gutschein im Wert von 2 Euro

Nur für Vereinsmitglieder

Gültig bis Ende:

März

**2004
0,04**

Juni

**2004
0,04**

September

**2004
0,04**

Dezember

Quartals-
marke
2004
0,04

€787,000

In money supply as of 2016, where 79% exists as *eChiemgauer*

Chiemgauer

Volkstheater



Alles in Ordnung

Djurs

To be used in Djursland (Denmark) to support local shops

Sell 100 Djurs for 95 DKK

Local associations/“foreninger” gets ~2% discount on Djurs



Implementation


Stripe as payment card gateway

Payment card charges triggers **minting**



ERC20 - mintable

```
contract MintableToken {  
    function mint(address _to, uint256 _amount) {  
        totalSupply_ = totalSupply_.add(_amount);  
        balances[_to] = balances[_to].add(_amount);  
    }  
}
```



Implementation

Actual tx price = **gas use** + **Stripe fee**

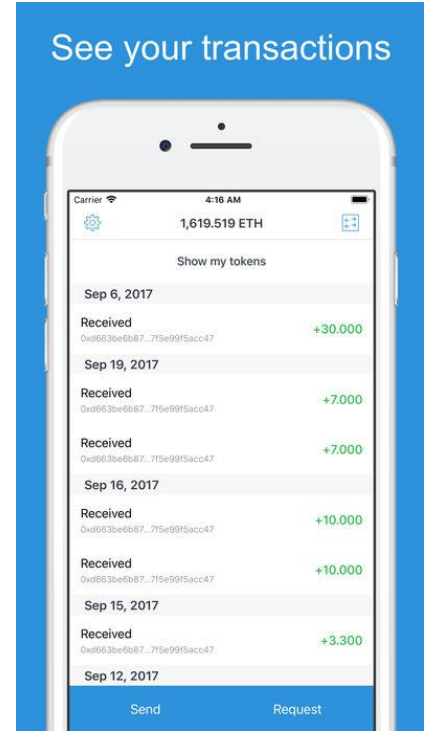
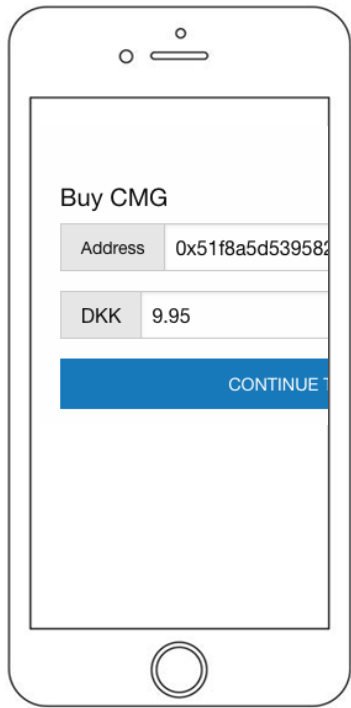
14 Gwei/gas * 40.000 gas = 560.000 Gwei

560.000 Gwei * 4900 DKK/ether * 0.000000001 = 2,744 DKK

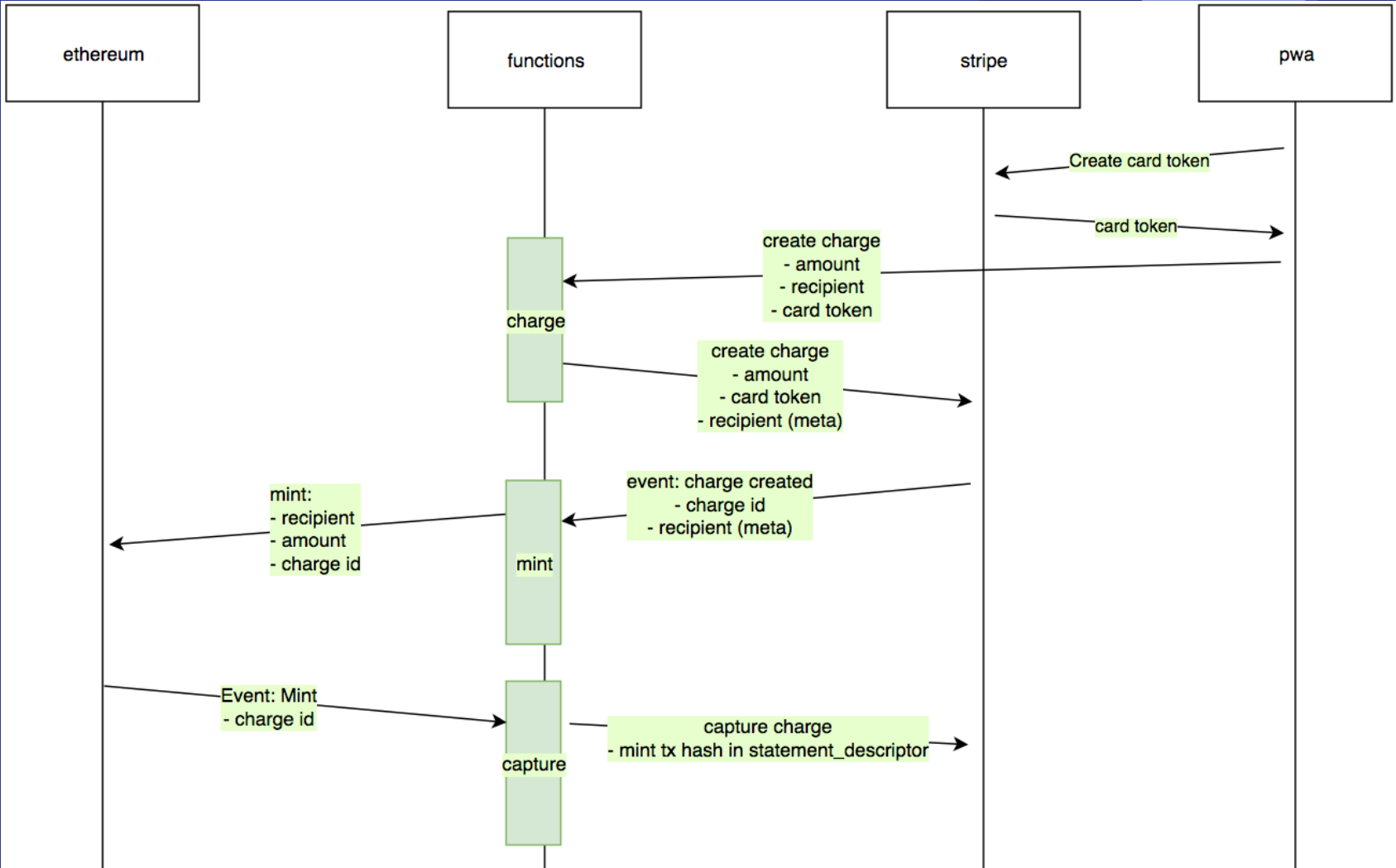
1% of amount + 1,8 DKK

100 * 0.01 + 1,8 + 2,744 = 5,544 DKK pr tx

Wei	1000000000
Kwei, Ada, Femtoether	1000000
Mwei, Babbage, Picoether	1000
Gwei, Shannon, Nanoether, Nano	1
Szabo, Microether, Micro	0.001
Finney, Milliether, Milli	0.000001
Ether	0.000000001



```
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```



Implementation

Google cloud functions for

1. Processing callbacks (web hooks) from Stripe
2. Holding the keys for minting

Infura as Ethereum RPC provider

Web app distributed via **IPFS**



“Selling”

A hacky solution for selling Chiemgauer could be to refund the charge

Sell 100 Chiemgauer for 95 - 5,544 DKK = 89,456 DKK





Demo!

Plz pray to the demo gods

Token contract address



Install Trust wallet

1. Install Trust wallet
2. Set it to *Rinkeby*
3. Add the token by QR code

Web app URL



Try it!

1. Go to the app and pay with
 - a. Card 4242 4242 4242 4242
 - b. Expiry 02/2020
 - c. CVC 222
 2. Wait ~1 min for your tokens
-

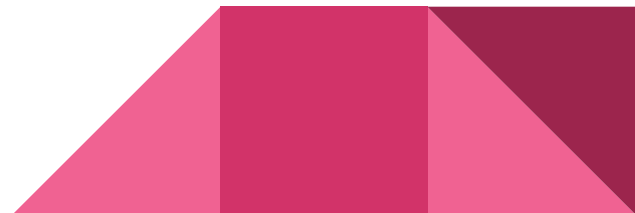
Perspectivation

Hm, that was easy? .. “standing on the shoulder of giants”

No demurrage (yet)

ERC20 tokens have the best wallet support! (Trust wallet)

Use Chiemgauer to vote on Token Curated Registries



k thx

Links

Code <https://github.com/WeOU/chiemgauer>

Slides http://docs.google.com/presentation/d/1iBQF6jRqubleov5vxn2bkv_HZ-SsSxtQlpzuEHEPPKc