

Lucerne University of
Applied Sciences and Arts

**HOCHSCHULE
LUZERN**

Hochschule Luzern
Informatik

Blockchain
Was ist das?
Was sind die möglichen
Einsatzgebiete?

Prof. Dr. Tim Weingärtner

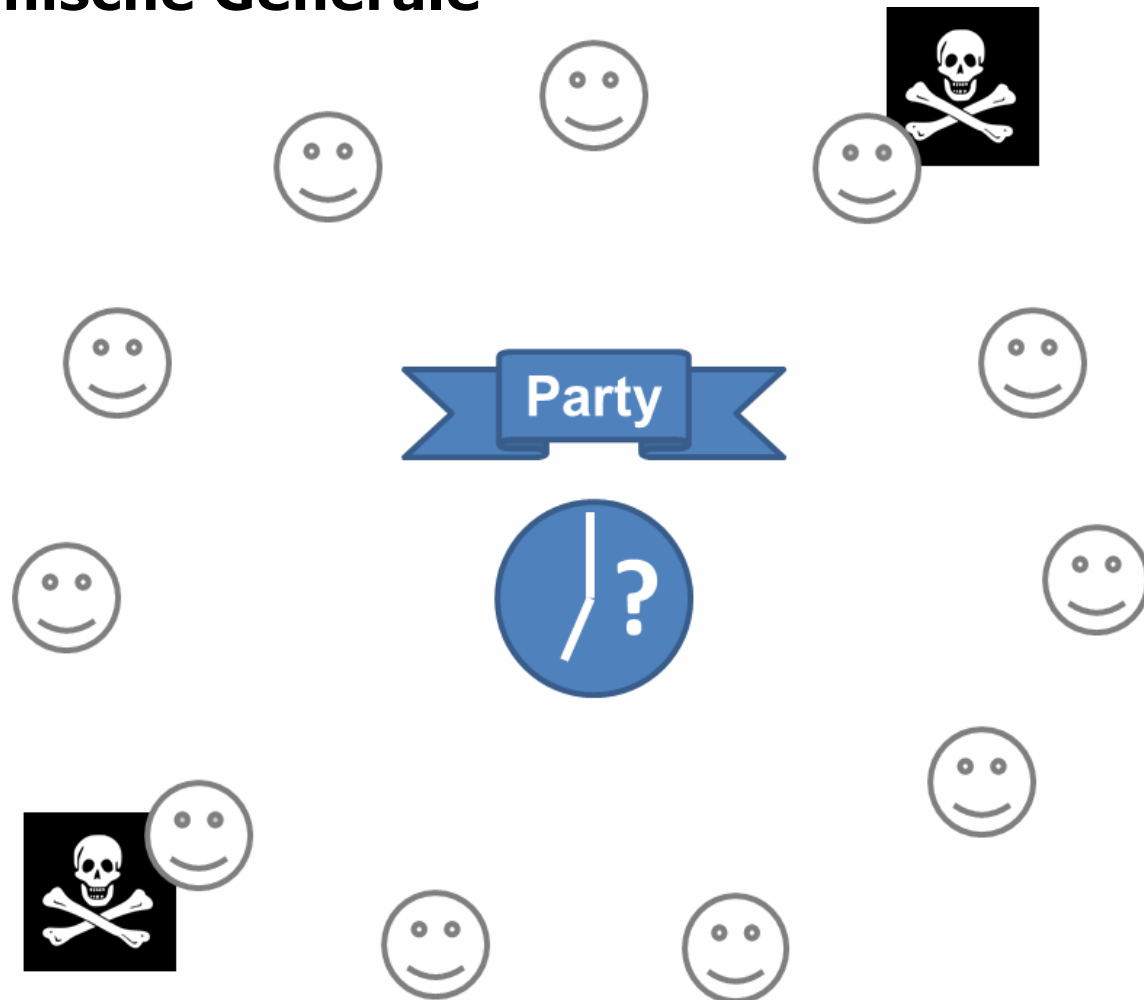
Historie von Blockchain und Bitcoin

- Oktober 2008:
Paper von Satoshi Nakamoto
- Nakamoto ist ein Pseudonym
- Blockchain = Technologie
Bitcoin = Wahrung



<http://www.finanzen.ch/devisen/chart/bitcoin-franken-kurs>

Byzantinische Generäle



Hash Code - «Spiegelei-Prinzip»



PASSWORD!

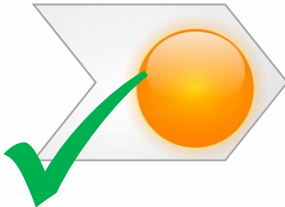
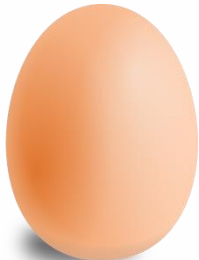
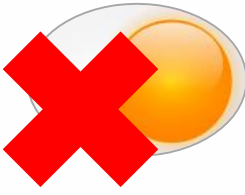
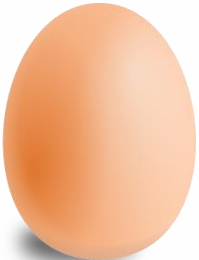
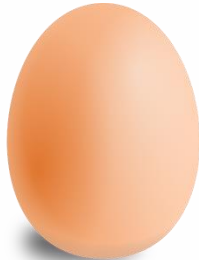


09bffa954fe
f56de82867
1a2b64da71
009bae89de
f060eb355a
7d

Proof of Work – «Slot Machine»



Proof of Work



Nonce



~~001b0~~9bffa...

? +

PASSWORD!



~~0f45d~~9bffa...



000009bffa...

Mining

Block: # 1

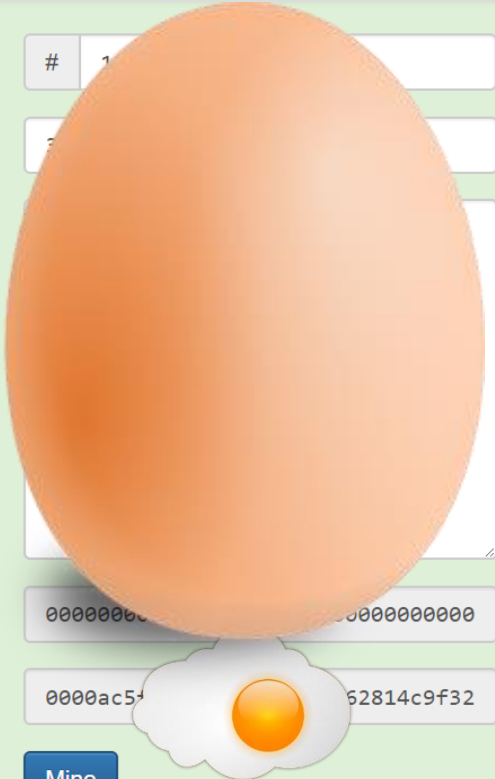
Nonce: 5

Data:

Prev: 00000000000000000000000000000000

Hash: 0000ac5f8097537da2b32ef62814c9f32

Mine



Block: # 2


Nonce: 18687

Data: Blockchain: Hype und Realität
Bedeutung für die Standardisierung im
E-Government

Prev: 0000ac5f8097537da2b32ef62814c9f32

Hash: 00008e82366ec4ee8978745321b4af3ed

Mine



Block: # 3


Nonce: 84815

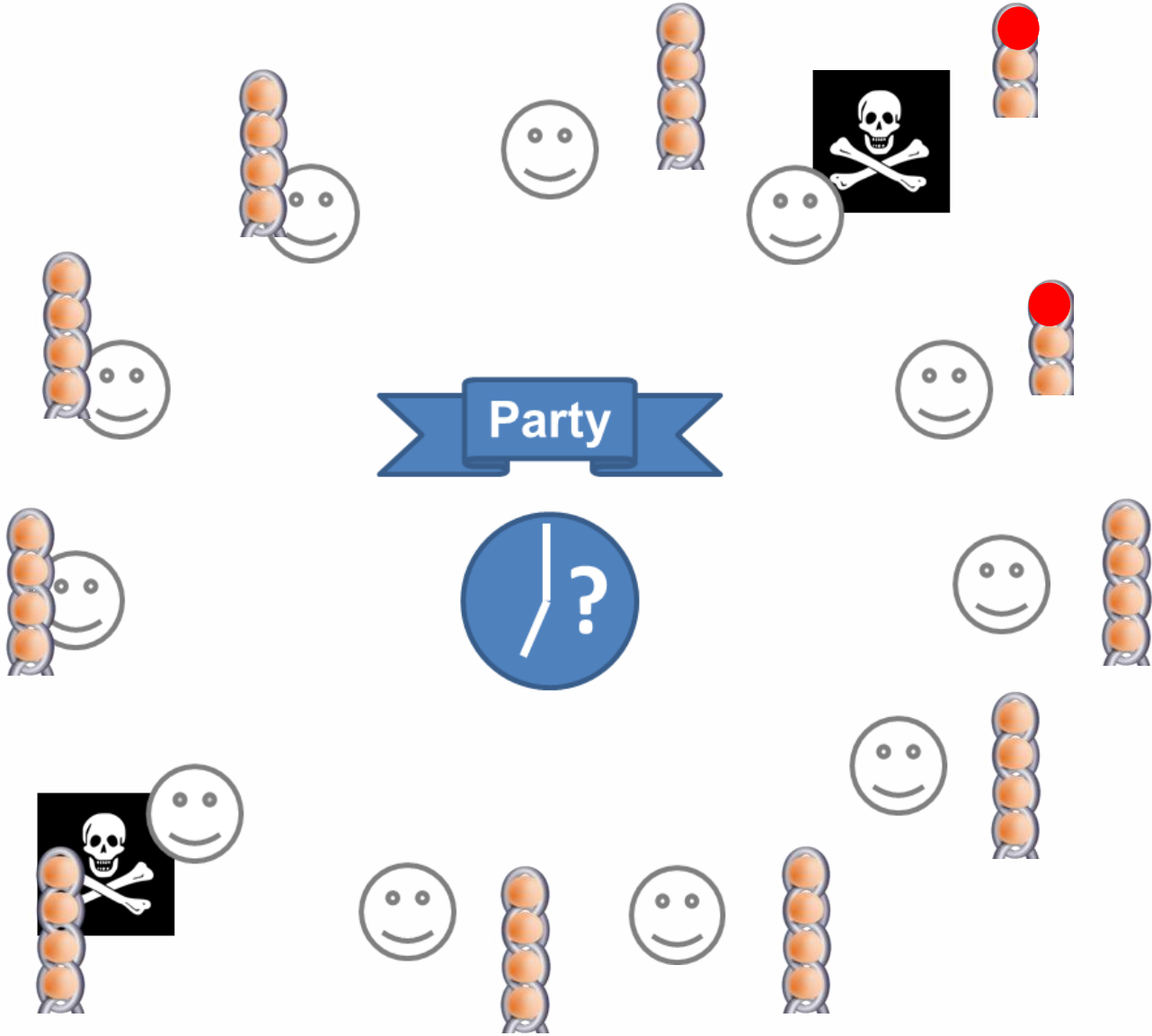
Data: Mittwoch, 20. September 2017

Prev: 00008e82366ec4ee8978745321b4af3ed

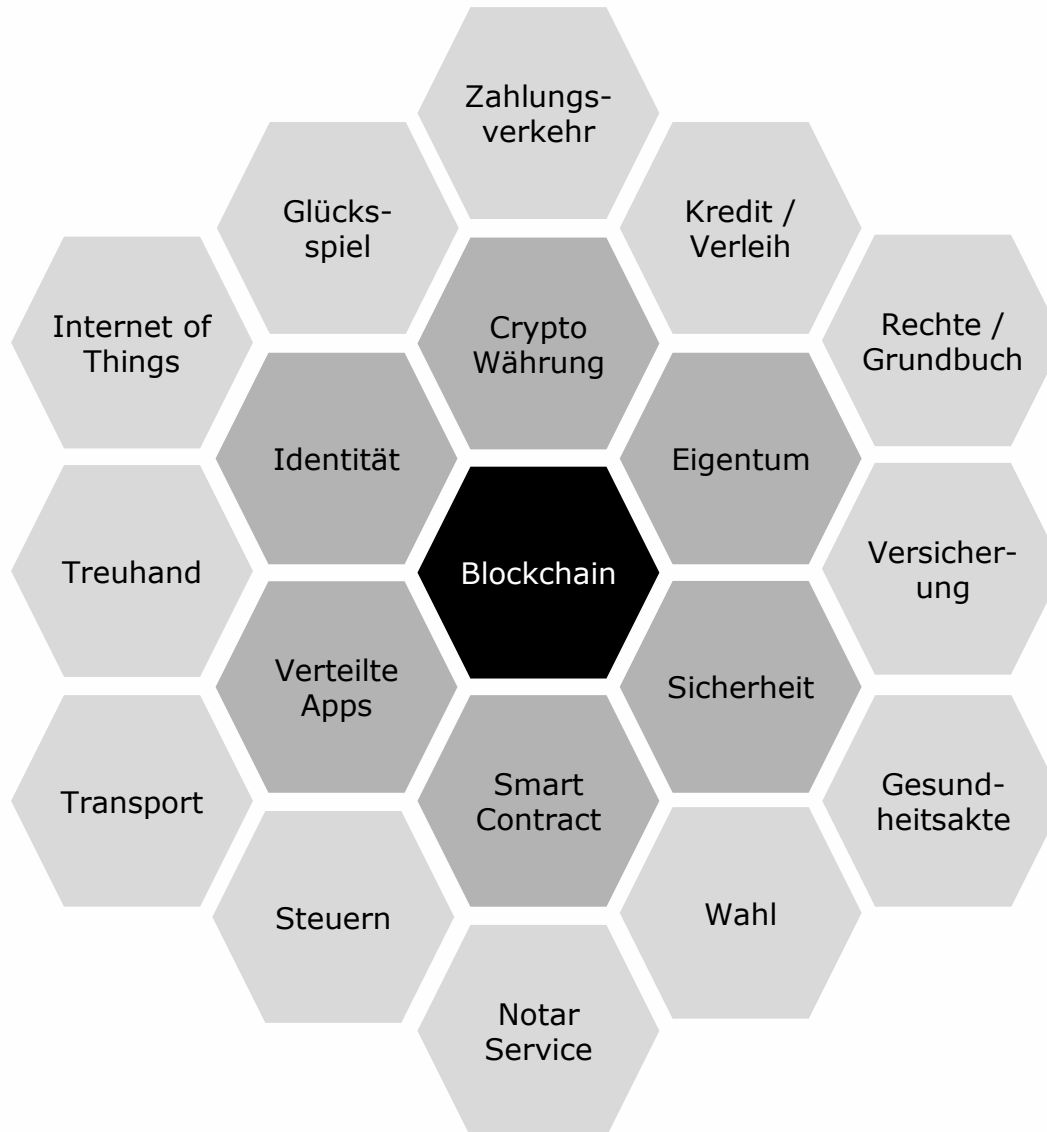
Hash: 000055f477621eef4d4f7

Mine





Anwendungsmöglichkeiten



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Vielen Dank!