



Proof-Of-Concept Blockchain Platform For Virtual Power Plants With Focus On Blockchain-Integrated Privacy Solutions

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Table Of Contents



- Motivation
- Thesis
- First Findings



Motivation

- Challenges for energy system
 - Climate change
 - Renewable energy
- Emerging technologies
 - Blockchain
 - Internet-of-Things
- Privacy



Privacy Scandals

www.observer.co.uk | Sunday 18 March 2018 | £3.00

The Observer

Revealed: 50m Facebook files taken in record data breach

The Cambridge Analytica Files

Full interview
Whistleblower Christopher Wylie lifts the lid
Cover story
New Review

Like or dislike
The algorithm that reveals all about you
Report, page 9

Facebook
How its destructive ethos imperils democracy
Observer
Comment, 44

Exclusive

- Whistleblower tells of bid to influence votes
- Tech giant suspends controversial data firm

Carole Cadwalladr
& Emma Graham-Harrison

The data analytics firm that worked with Donald Trump's election team and the winning Brexit campaign harvested millions of Facebook profiles of US voters, in one of the tech giant's biggest ever data breaches, and used them to build a powerful software program to predict and influence choices at the ballot box. A whistleblower has revealed to the Observer how Cambridge Analytica

Christopher Wylie, who worked with a Cambridge University academic to obtain the data, told the Observer: "We exploited Facebook to harvest millions of people's profiles. And built models to exploit what we knew about them and target their inner demons. That was the basis the entire company was built on."

Documents seen by the Observer, and confirmed by a Facebook statement, show that by late 2015 the company had found out that information had been harvested on an unprecedented scale. However, at the time it failed to alert users and took only limited steps to recover and secure the private information of more than 50 million individuals.

The New York Times is reporting that copies of the data harvested for Cambridge Analytica could still be found online; its reporting team had viewed some of the raw data.

The data was collected through an



General Data Protection Regulation (GDPR)

- 25 May 2018
- Right to Access
- Right to be Forgotten
- Privacy by Design



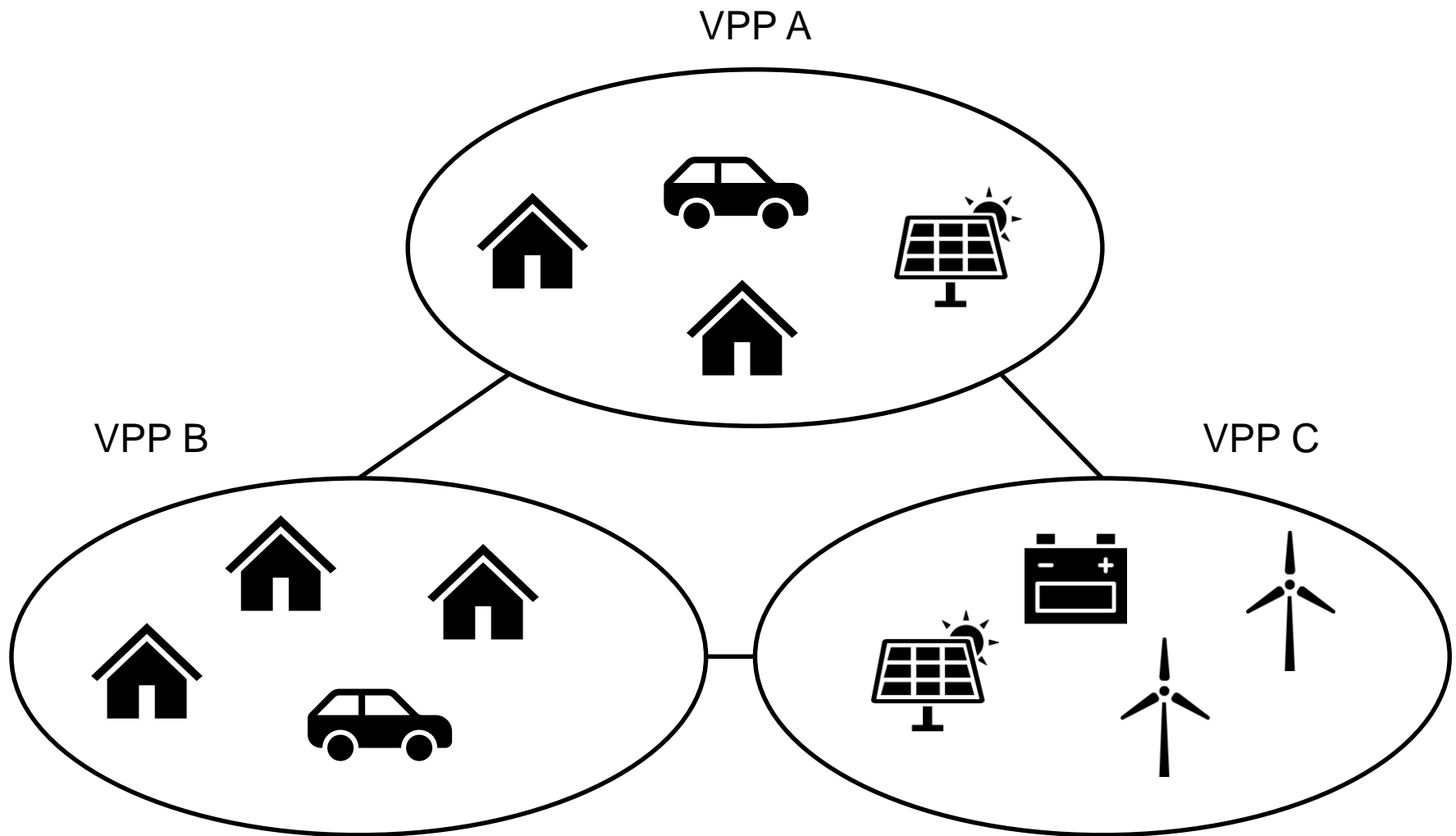
Thesis

- Virtual Power Plant (VPP) Blockchain Platform
 - Intra-VPP energy logging
 - Inter-VPP energy trading

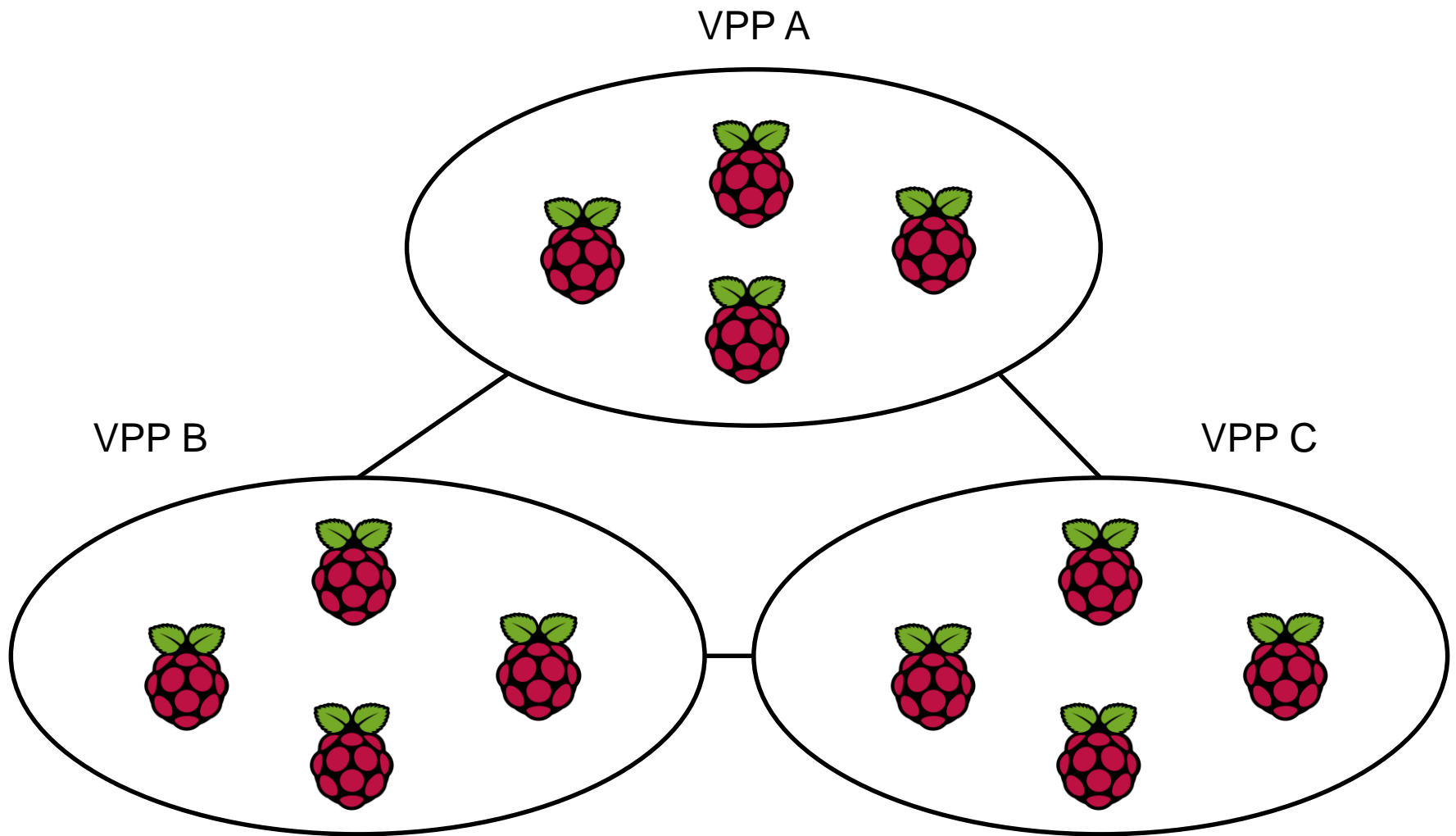
- Focus on privacy
 - Blockchain-integrated
 - Privacy solutions



Simulation



Simulation



Blockchain Implementations



HYPERLEDGER
FABRIC



HYPERLEDGER
SAWTOOTH

c.rda

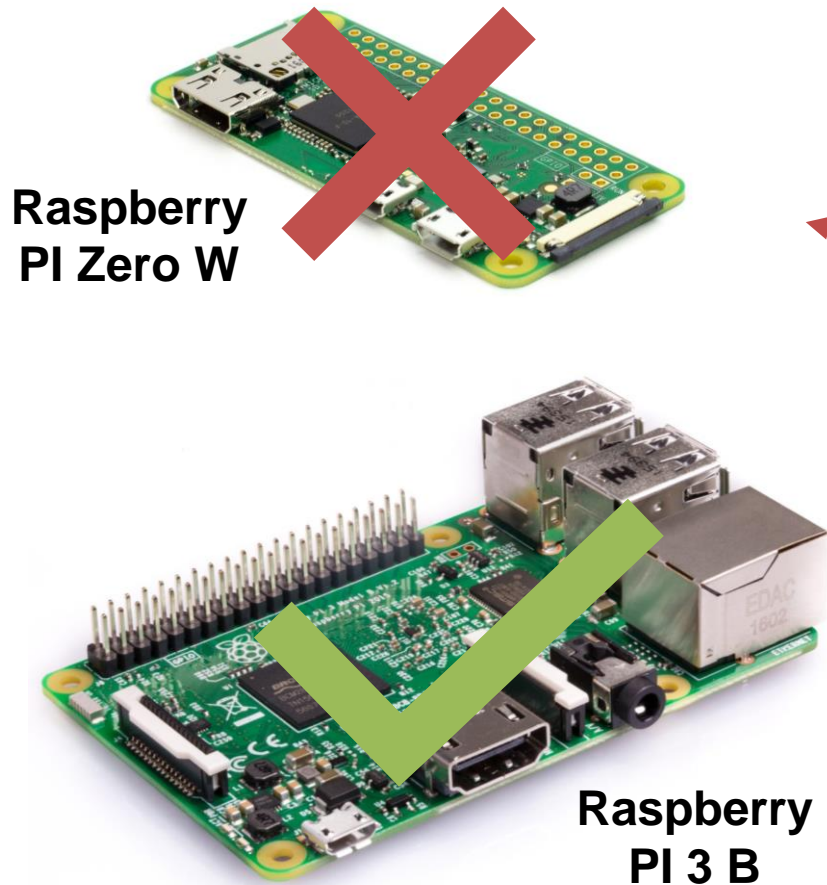


ethereum

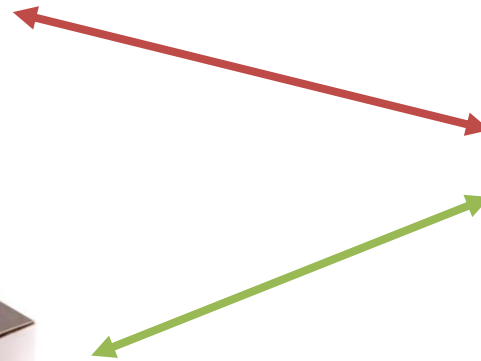


Quorum

HLF and Raspberry Pis



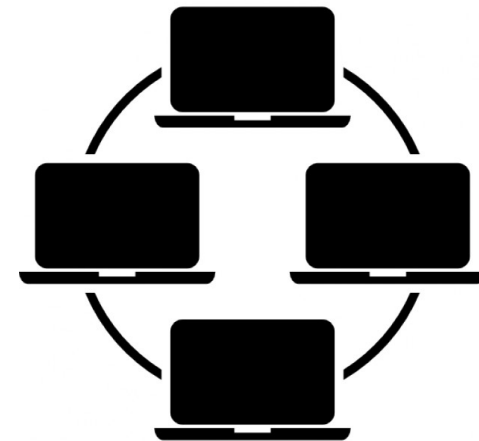
Hyperledger Fabric



HLF and Deployment

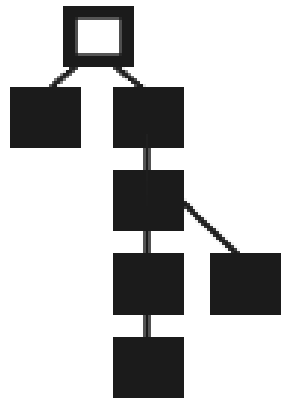


Documentation



Multi-node

Blockchain and GDPR



Blockchain



GDPR



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Computertechnik
Institute of
Computer Technology

Thank you
for your attention!