



Paving the way for trusted Blockchain applications

Friday, 6 October 2017

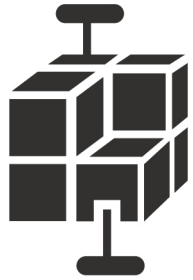
Tallinn Creative Hub Kultuurikatel

Tallinn, Estonia



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Digitalization and the disruptive potential of Blockchain



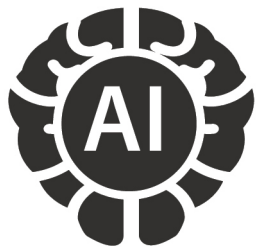
BIG DATA



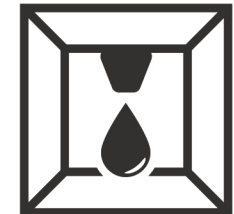
BLOCKCHAIN



INTERNET OF THINGS



ARTIFICIAL INTELLIGENCE



3D PRINTING

What is a Blockchain?

- Blockchain is to transactions what Internet is to interconnection
- Blockchain, a trusted global decentralized database
- No third party, trust is provided by the network of Blockchain nodes

Key properties of a Blockchain

- Decentralized => highly reliable
- Consistent => all participants see the same information
- Consensus-based => the network replaces a central authority
- Immutable and append-only => modifications are sequential and permanent
- Transparent => rules are known and data is open

Consensus, the core of a Blockchain

- Transactions are grouped in blocks which are linked in a chain of blocks
- All nodes validate proposed transactions
- Nodes also propose new blocks to the network
- Consensus reached by following rules on how new blocks are validated
- Proof of Work (PoW)
 - a hard puzzle that has to be solved for each new block
 - makes new block proposals time- and cost-intensive
 - makes modification of past blocks impossible

Bitcoin (a public Blockchain use case)

- In 2008 Satoshi Nakamoto invented Blockchain and coded the first implementation : Bitcoin
- A peer to peer electronic cash system, does not require a central authority (no financial institution)
- A distributed open ledger containing Bitcoin transactions
- The nodes are the guardians of the network
- Using underlying Blockchain technology with PoW consensus

Blockchain, more than transactions?

Image of Nelson Mandela (1918-2013) contained in Bitcoin transaction
8881a937a437ff6ce83be3a89d77ea88ee12315f37f7ef0dd3742c30eef92dba

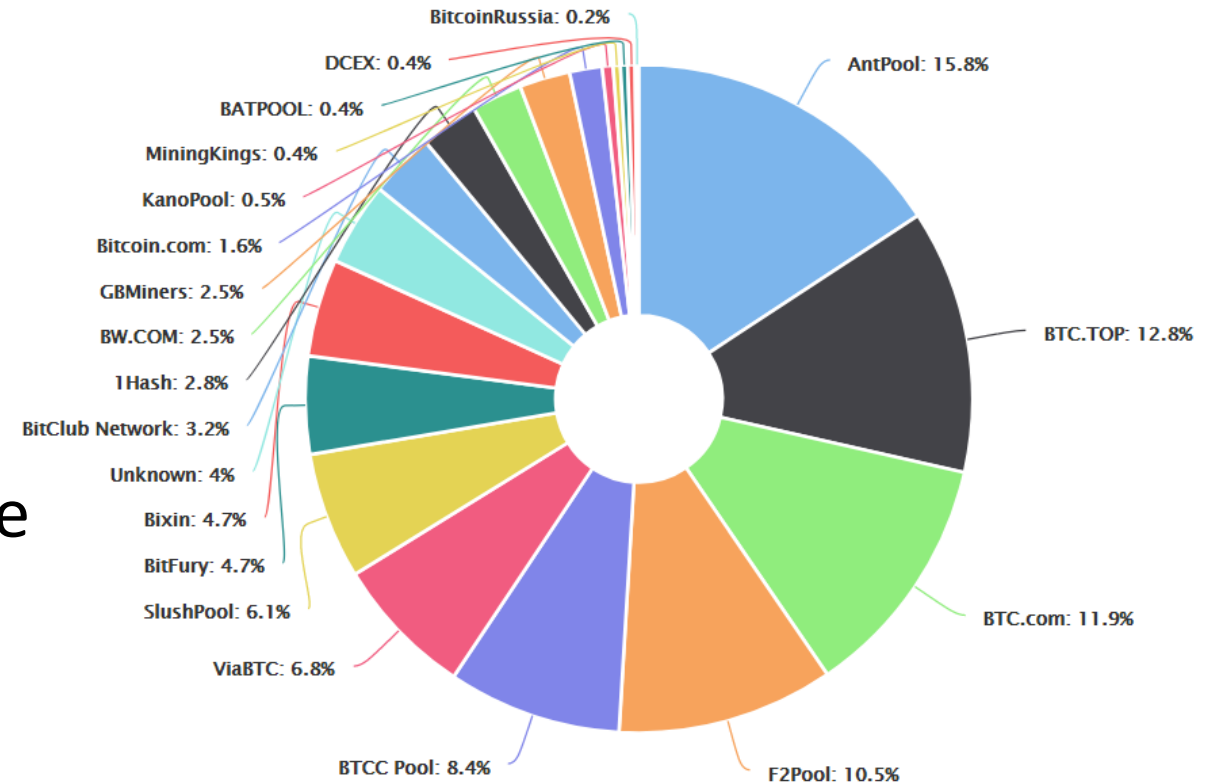


Public sector use cases

- Its time to “play” with Blockchains
- Audit trails / non-repudiation / time-stamping / token systems
- A way for unrelated parties to use a common highly trusted ledger without any central authority.
- Gives citizens improved control over their data
- eVoting platforms

Public Blockchains lack:

- Accountability of operators
- Sustainable operational environment
- Regulatory compliance
- Active monitoring and governance
- True decentralisation of trust



Hash power distribution on Bitcoin
<https://blockchain.info/pools>

Private Blockchains lack:

- Community governance, distributed trust
- High level of resilience
- Added value compared to non-Blockchain implementation

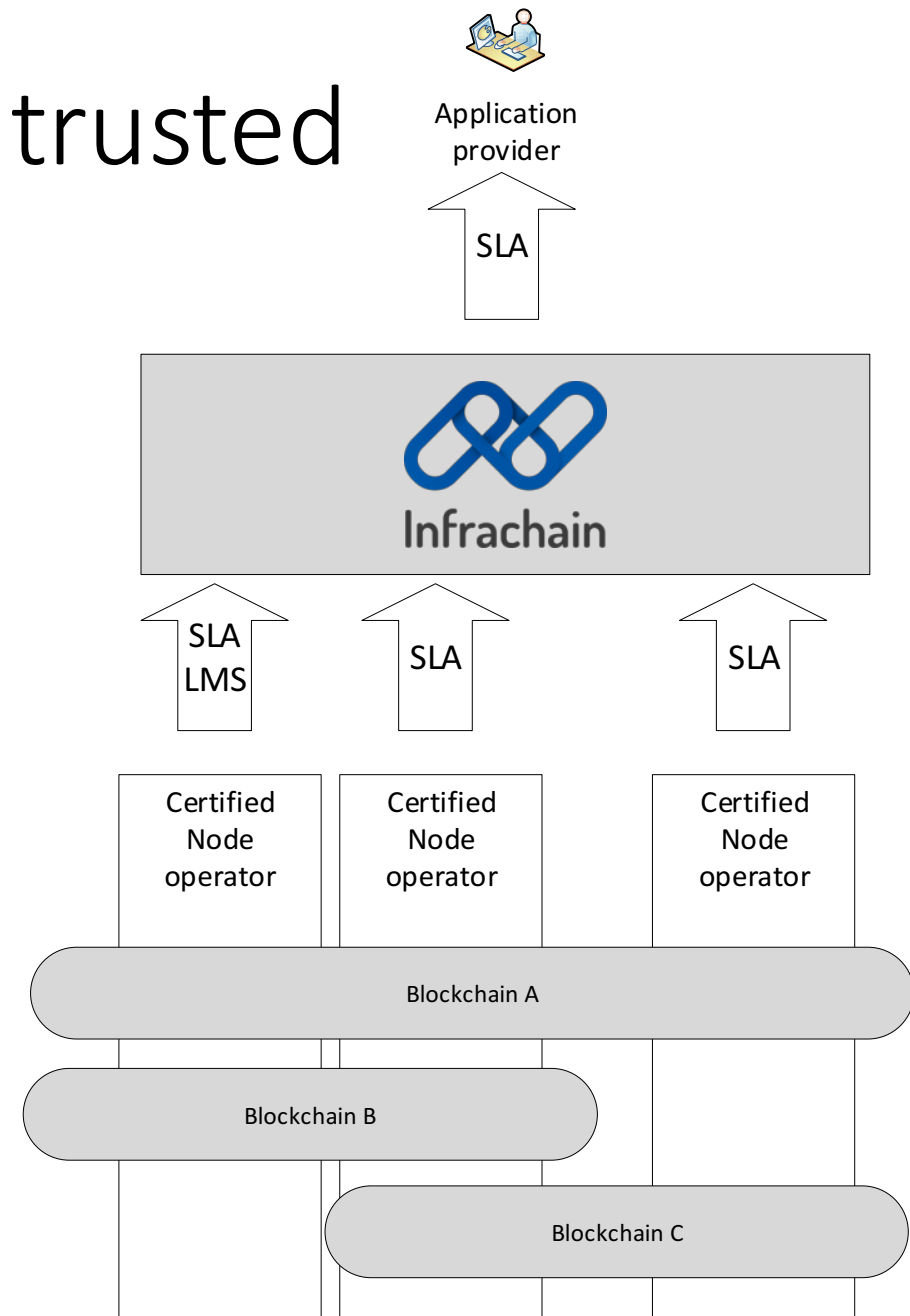
Bridging the gap

- Community-based governance
- Sustainable environment
- Accountable node operators
- Regulatory compliance ready
- High security standards
- Technology agnostic



Infrachain, paving the way for trusted Blockchain applications

- A private sector initiative with public sector support
- A non-profit organization
- Provides a transparent framework for:
 - Community governance
 - Node operator certification
 - SLA for node operators
 - SLA for application providers
 - Blockchain technology agnostic



A community initiative

ALLEN & OVERY



Deloitte.



Research
Partner



securityandtrust.lu



Accepting founding members till 18th of November 2017

Next steps

- Expand ETH test chain
- Action groups working on our framework
 - Technical improvements
 - Blockchain governance
 - Node Certification and SLA
 - Regulatory compliancy
- We need public and private sector participation
 - Become an Infrachain member
 - Become an Infrachain node operator
 - Become an Infrachain application provider



Questions ?

Thanks for your attention

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