The Internet of Trusted Things

Blockchain Conference @ Muenchner Kreis

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ubirch


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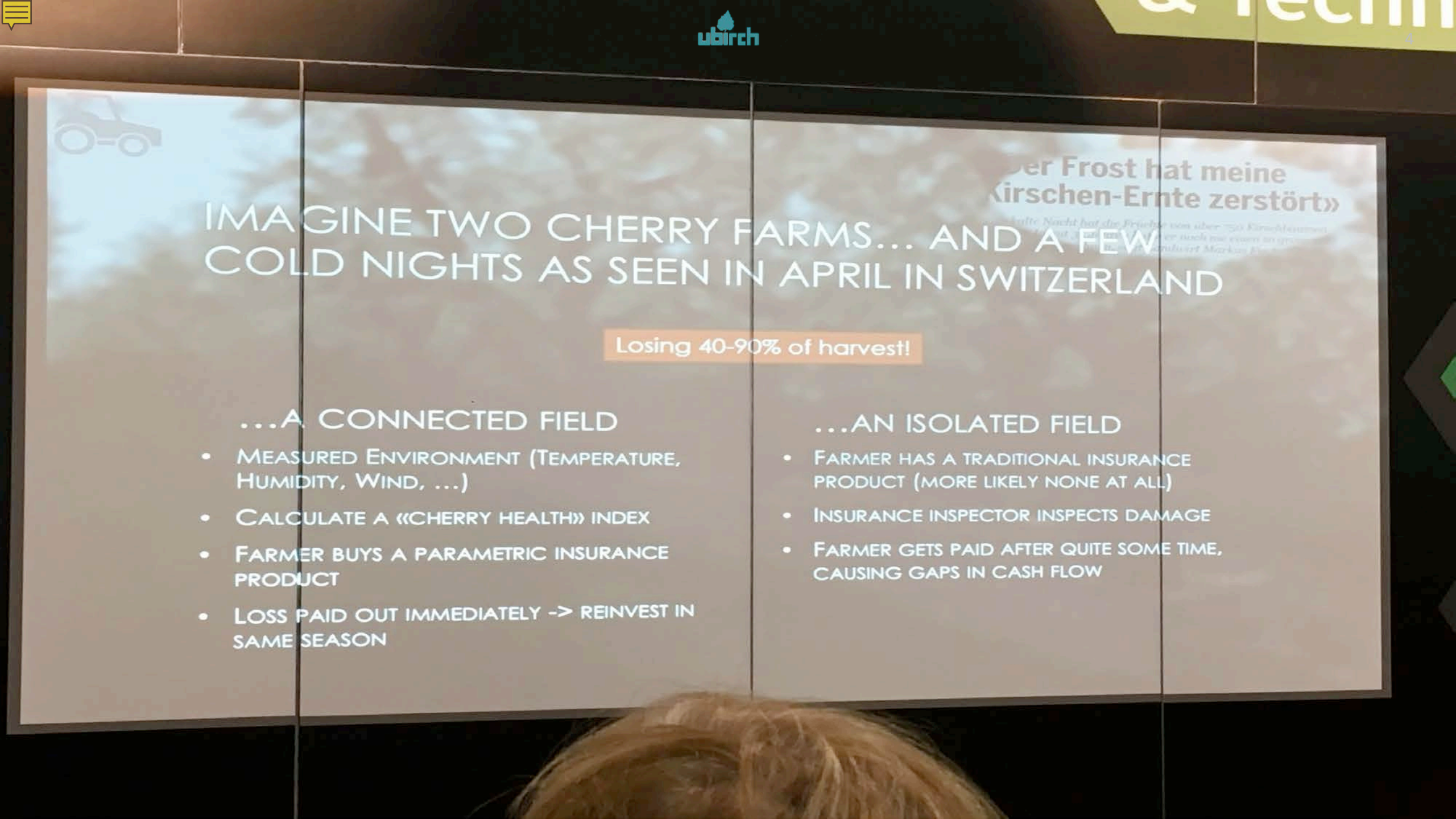
Data Breach
Cyber Attack
Protection
System Safety
Compromised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IMAGINE TWO CHERRY FARMS… AND A FEW COLD NIGHTS AS SEEN IN APRIL IN SWITZERLAND
Losing 40-90% of harvest!
…A CONNECTED FIELD
• MEASURED ENVIRONMENT (TEMPERATURE, HUMIDITY, WIND, …)
• CALCULATE A «CHERRY HEALTH» INDEX
• FARMER BUYS A PARAMETRIC INSURANCE PRODUCT
• LOSS PAID OUT IMMEDIATELY -> REINVEST IN SAME SEASON
…AN ISOLATED FIELD
• FARMER HAS A TRADITIONAL INSURANCE PRODUCT (MORE LIKELY NONE AT ALL)
• INSURANCE INSPECTOR INSPECTS DAMAGE
• FARMER GETS PAID AFTER QUITE SOME TIME, CAUSING GAPS IN CASH FLOW

MUST READ IBM DEBUTS BLOCKCHAIN NETWORK FOR CROSS-BORDER PAYMENTS

Scammers target Hurricane Harvey, Houston victims

The FTC has warned that fraudsters have reached a new low with a flood insurance scam.

By Charlie Osborne for Zero Day | September 1, 2017 -- 08:54 GMT (09:54 BST) | Topic: Security

Notarielle Urkunde

Die Übereinstimmung der nachstehenden Abschrift mit der mir vorliegenden Urschrift beglaubige ich.

Köln, den 2. März 2016

Dr. Jürgen Kallrath
Notar


B
E
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Programming Techniques
S. L. Graham, R. L. Rivest Editors

Secure Communications Over Insecure Channels

Ralph C. Merkle
Department of Electrical Engineering and Computer Sciences
University of California, Berkeley

According to traditional conceptions of cryptographic security, it is necessary to transmit a key, by secret means, before encrypted messages can be sent securely. This paper shows that it is possible to select a key over open communications channels in such a fashion that communications security can be maintained. A method is described which forces any enemy to expend an amount of work which increases as

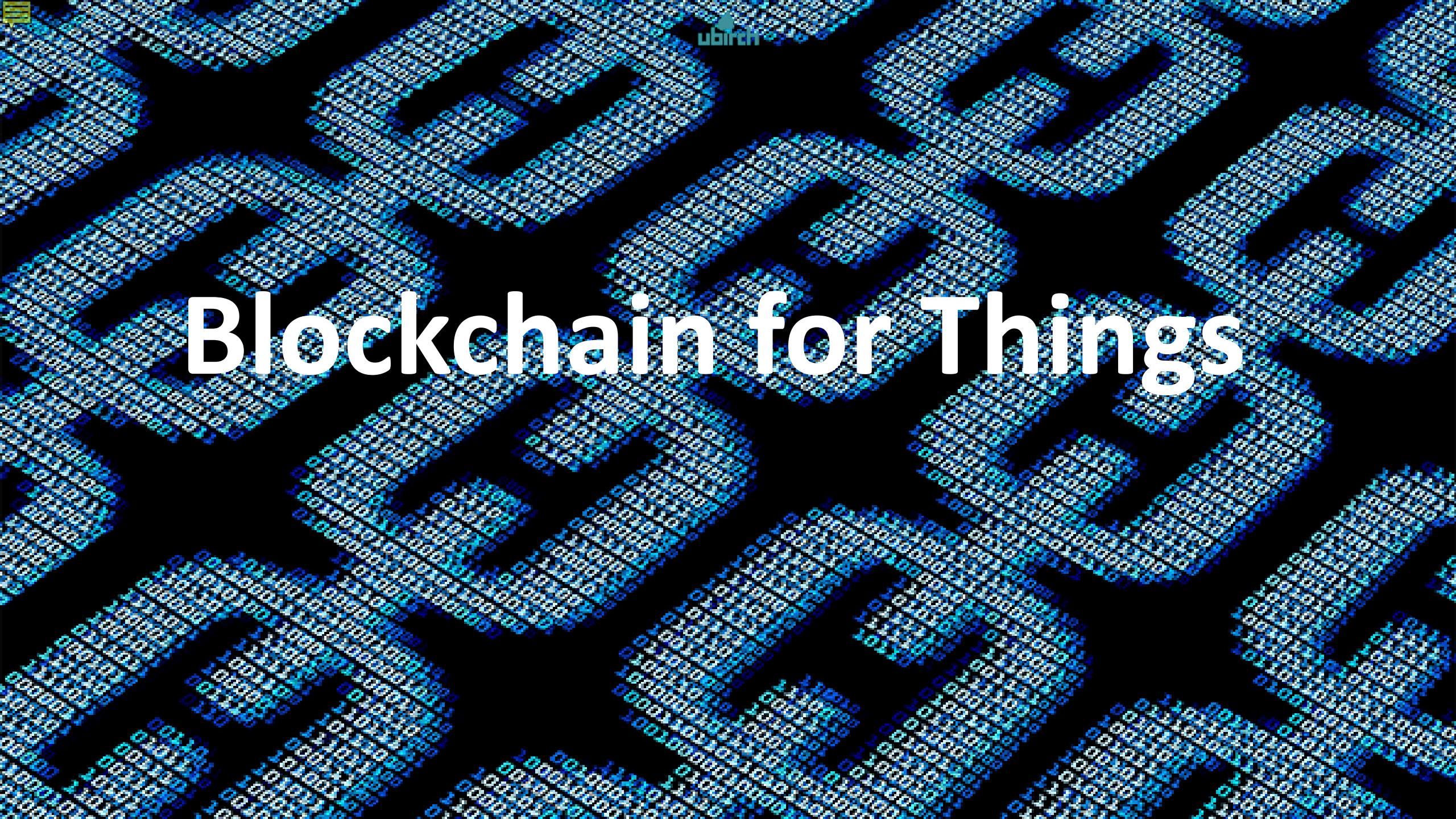
Security and Trust by Design

- ubirch brings the strongest security architecture to IoT: **public/private key cryptography** + **blockchain**

ubirch 1st

- Keys are generated **on the device**
- Private keys **never leave devices**

- Critical data **anchored in blockchain**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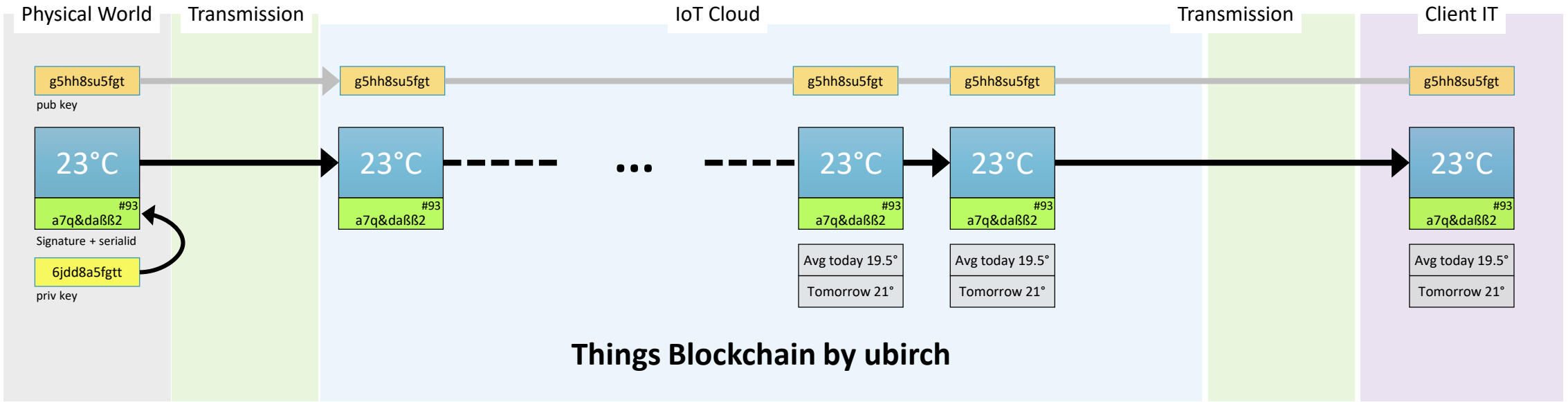
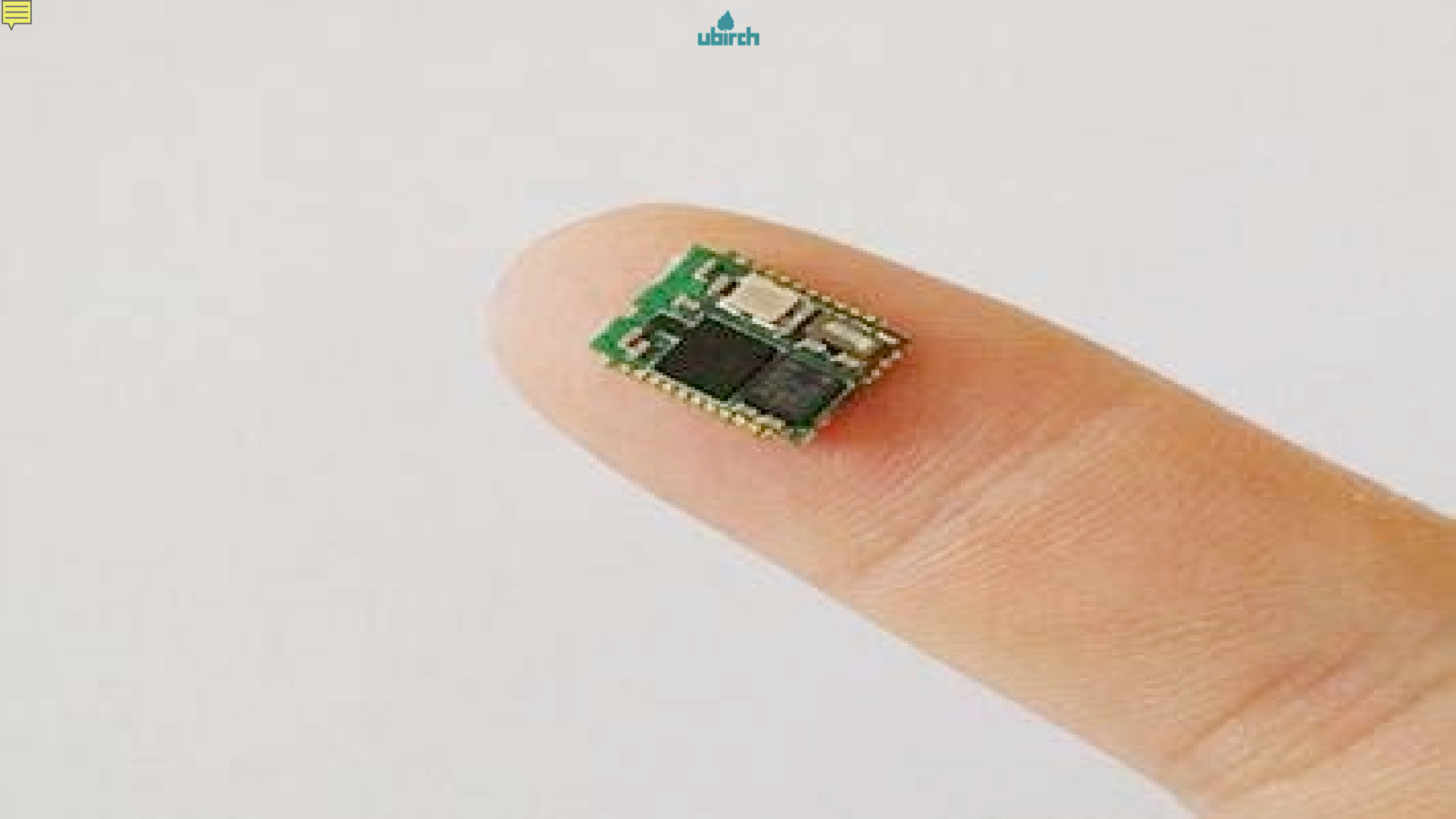
Blockchain for Things

Previous output (index)[?]	Amount[?]	From address[?]	Type[?]	ScriptSig[?]
eb38f77560ca...:1	8	1P9SgqzjFWgWVAuZBFwimNPV7LuuaJpgTj	Address	30450220078df7c48ed152bd40eaee4a73afefc31 044760639da2c0d6158484e1a4dab332fefc4bb8
b912994fca58...:1	0.03	18Mk65wV1E5kCVHFShvUTU6zt4yVFKM5Ft	Address	304502204e877fc5ca3783e165052e64c4788dd 04769bbfc55cbd412784e024c8624f8c4f42d7cb
58379d94fe85...:15	1	1G4hfnM2ufAPEECdawg5gtvUTBB2PxvLr2	Address	3044022075d23fd4a8004866777210f51f46c960 046dd45b37fe3ff33f1563458cfbdfb7f922d1b4a4
fc9d1cd1c2ac...:1	130	1LpQVnJSMgqqibQBGZwbobdX2Ghn9YWyC7	Address	3046022100a65a188b89a4e5ae2eaa5ba387503 04ba81a1a538c5ddf7e0c76884497ab522456b9
7b6f7d4a521c...:1	0.55357267	16Kb6XppHUbjgmYQDpRyxz9jNE9Az5Xvcb	Address	3045022100eeb76e61abe62d38fd462eafd1d11f 04f4fa1d3e26f3e7058038871a31b8bf63fd127f6
544097a30e09...:0	0.03270607	1JnsDx1g6c757z8AnJUemj46YQgCTw54QN	Address	3045022100859df2ced47493e86a849cce10615 04de257fe6490bd16188be6d06ca7b34816fa4b0

Security & Integrity – A Blockchain for Things

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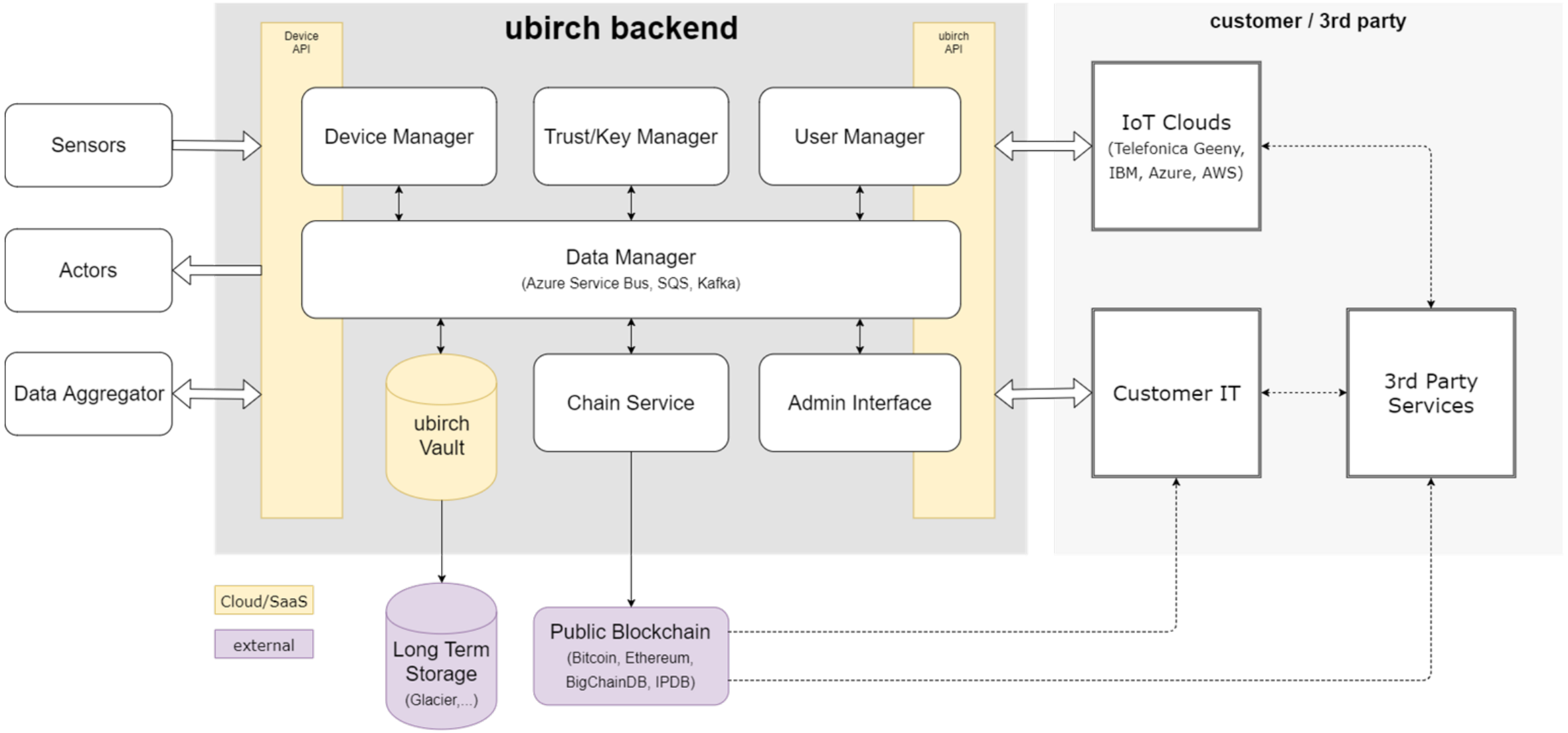
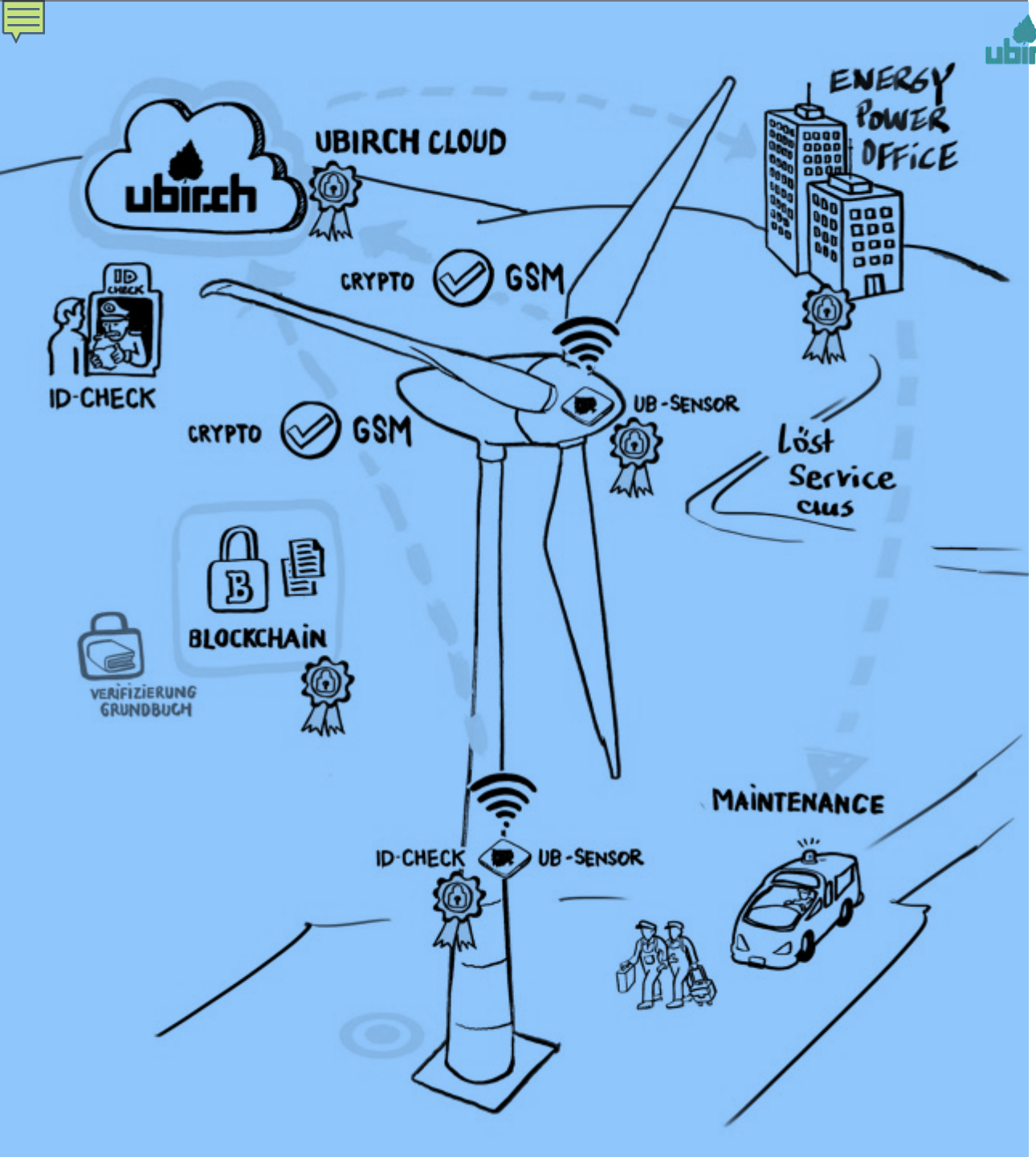
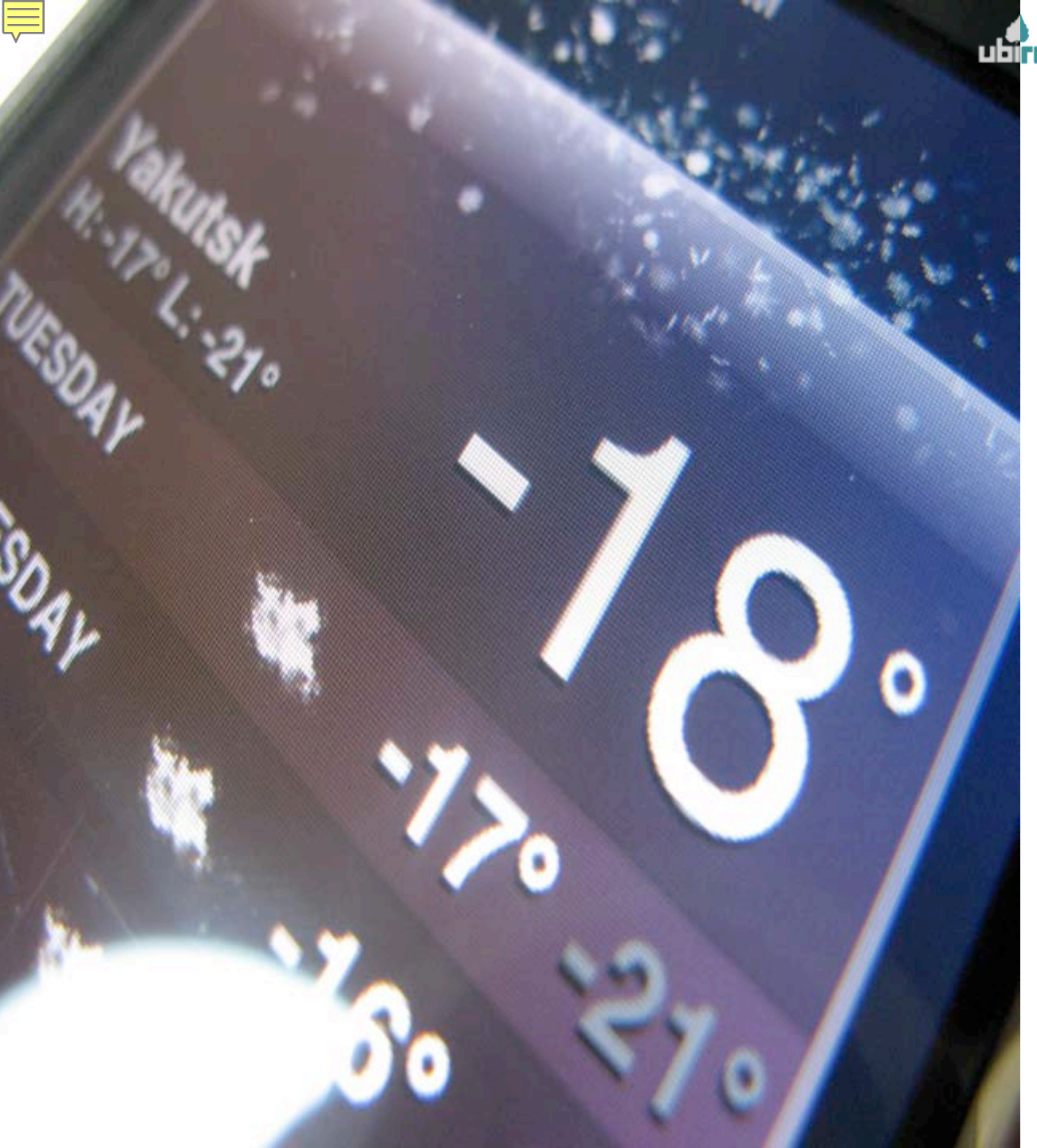
Platform Overview





Infrastructure: Trustworthy data leverages new models

- sensors in a wind turbine collect usage and environmental data
- critical actions (“turn it out of the wind”) are being verified and recorded
- a track record is cryptographically secured and saved to the blockchain
- users like the owner, the grid-manager, manufacturer etc. can rely on the data for maintenance, billing, insuring etc.
- efficient new business models are possible like automated insurance, predictive maintenance, grid-control etc.



Automated Crop-Insurance

- Measurements on site are recorded, signed and stored in a blockchain
- signing happens on the sensor itself
- Integrity and authenticity of data can be verified across the whole value-chain
- fraud-detection algorithms
- Claims can be processed automatically by smart contracts, the farmer gets compensation literally on the next morning
  → can buy and plant replacements immediately

Connected Forklift

- Forklifts are being tracked with sensors and location
- Data is signed and secured
- Connected parties (machines, people, ERP-Systems etc.) can rely on the data from the forklift
- Supply Chain automation works reliable
- Predicitive maintenance
- Safety requirements can be tracked and proved (speed limits, weight limits etc.)
- Damages can be reported to insurance automatically (including smart contract payment)
- Lift as a Service works

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