The Vertical Cybersecurity Platform

Securing ledgers on Blockchain

WISeKey Geneva

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WISeKey

www.wisekey.com

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AGENDA

1. **WISeKey Vertical Platform**

2. **Blockchain Roundtable in Davos**

3. **Securing ledgers on Blockchain**
   a. Demo Digital Signature document
   b. Demo WISeID Bitcoin Wallet

The Vertical Platform

WIS@key
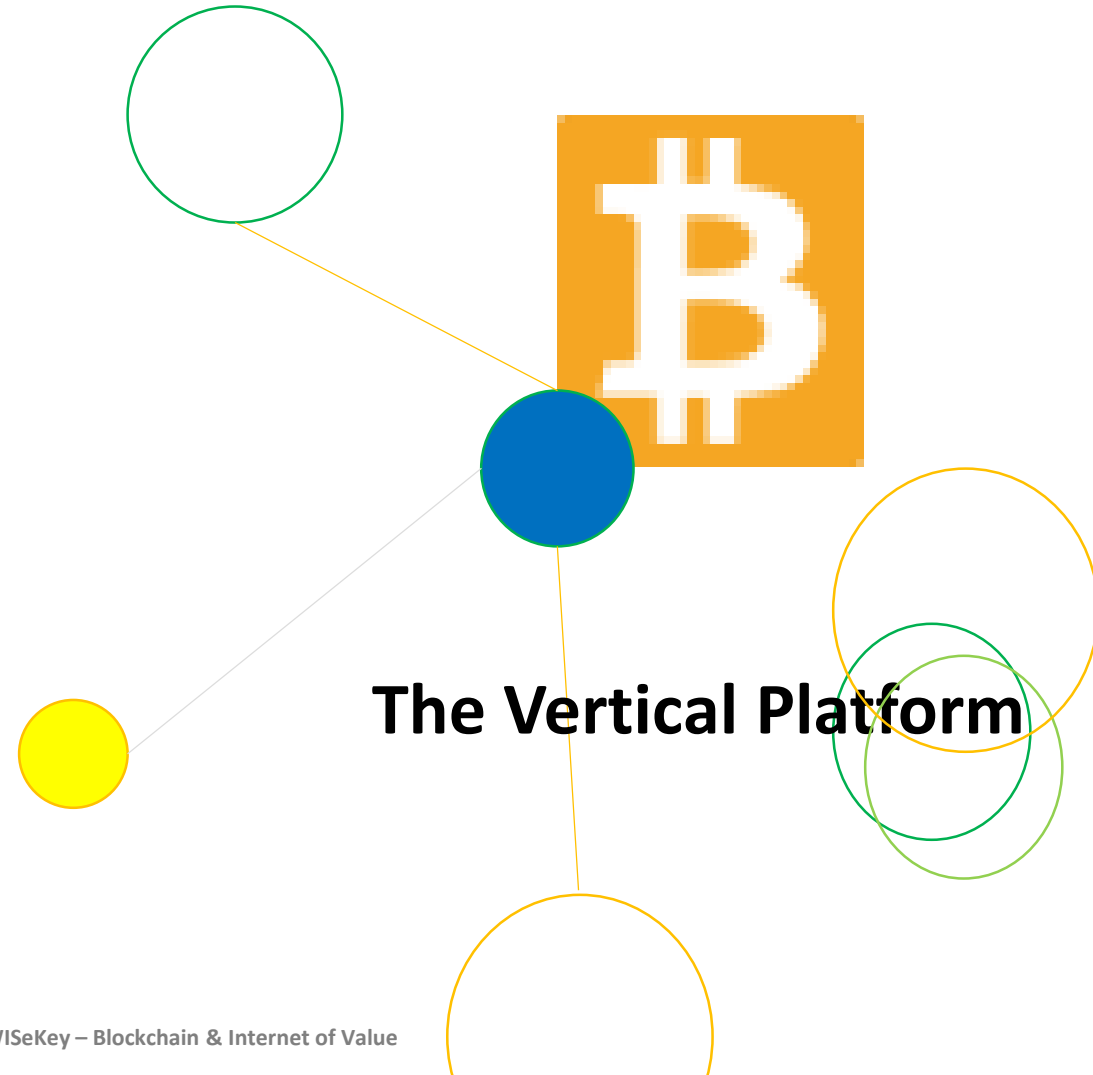
WISEKEY – VISION AND MISSION

Vision

- **Technology allows to connected People-to-Machines and Machine-to-Machines, creating new opportunities to:**
  - improve people life, Optimize Processes and resources, Reduce Risk toward end users, Improve Processes and end-user experience, Create new businesses and Improve existing business

- **Companies and customers can realize value and enable monetization when they can certify that they are receiving authenticated and secure device data**

- Gain insight from it, and propose appropriate actions as needed (applications)

Company Overview

Mission

- **WISeKey's mission is to offers clients a Vertical Cybersecurity Platform integrating Root of Trust to Chip, empowering the Personal to be the Center of Gravity of the Internet.**

- **WISeKey is bringing trust and security through identity, confidentiality and integrity based on trusted cryptographic root keys.**

Why Switzerland ?

Zone of Mobile Privacy Secured in The Swiss Alps

- Outstanding and unprecentend infrastructure
- Leading technology center
- Highly educated employees
- Intellectual property protection
- Most innovative economy according to the Global Innovation Index 2014
- Political and financial stability

KEY MILESTONES – PROVEN TRACK RECORD SINCE THE INCORPORATION IN 1999

Transitional years

1999:
Incorporation of WISeKey SA by Carlos Moreira

2005:
Security products for computers and digital video broadcasting

2007:
Secure registration and access control of online offerings, dematerialization and secure electronic document dematerialization

2011:
WISeID and WISfans mobile products for securing social media applications and for effective data protection

2016:
WISeKey International Holding listed on the SIX Swiss Exchange

2003:
First ever binding Internet vote in the Canton of Geneva using biometric enabled public key infrastructure

2006:
Launch of CertifyID product for digital certification and identity management
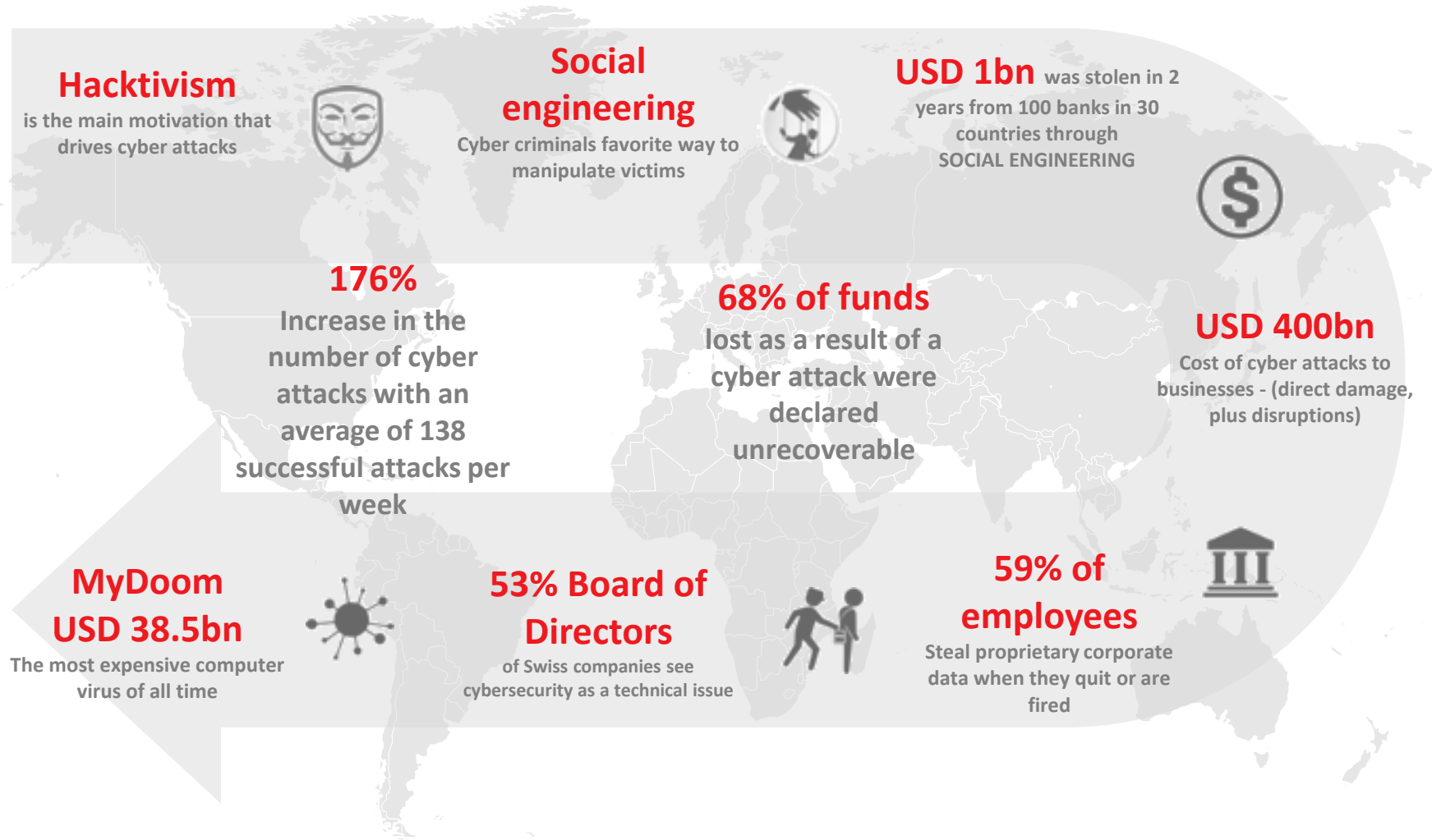
2008:
Citizen Services Platform in partnership with Microsoft for confirming citizen access to government services and validity of citizen electronic
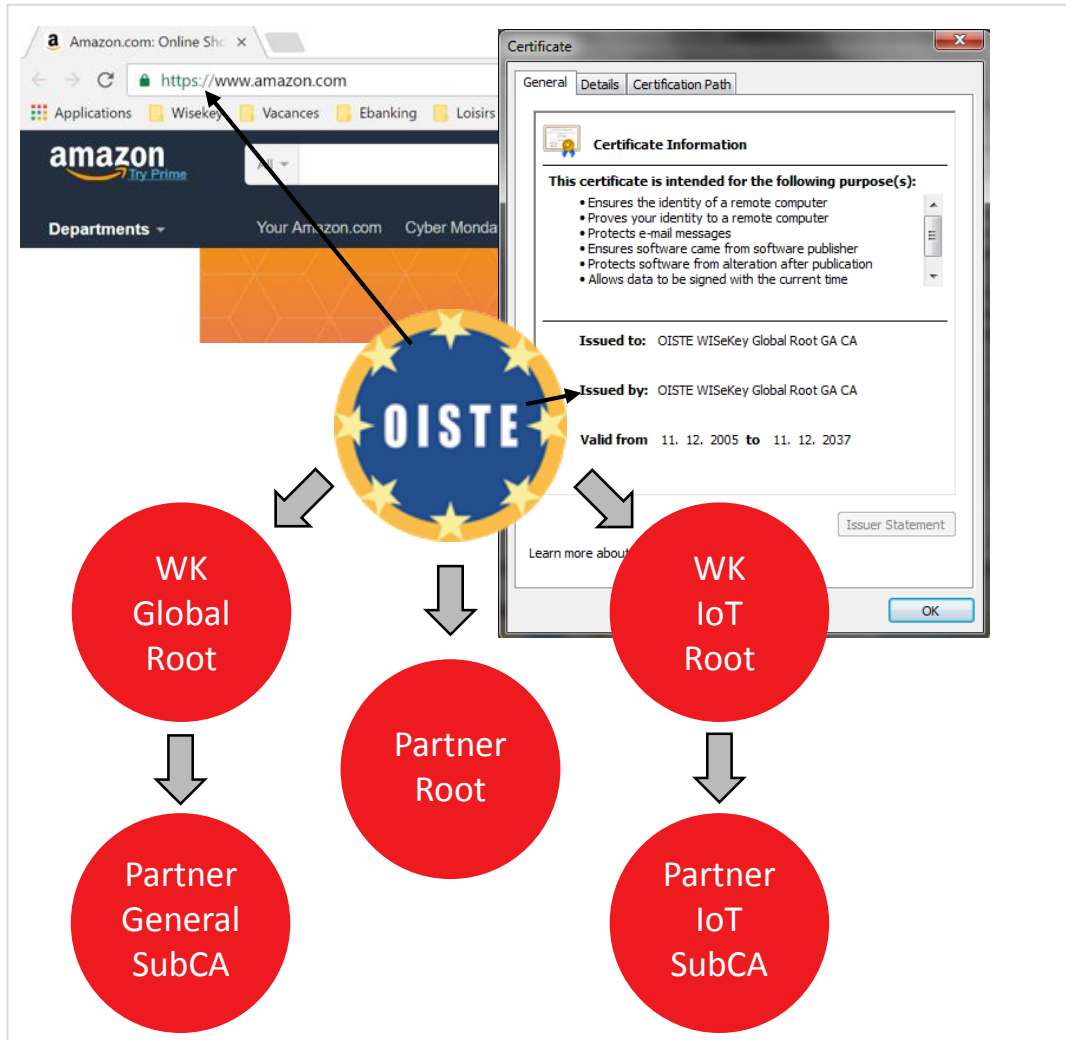
2014:
WISeAuthentic for the security of luxury goods, artwork, pharmaceuticals, spare parts and VIP social networking

9 SURPRISING FACTS ABOUT CYBER SECURITY

Hacktivism
is the main motivation that drives cyber attacks

Social engineering
Cyber criminals favorite way to manipulate victims

USD 1bn was stolen in 2 years from 100 banks in 30 countries through SOCIAL ENGINEERING

176%
Increase in the number of cyber attacks with an average of 138 successful attacks per week

68% of funds
lost as a result of a cyber attack were declared unrecoverable

USD 400bn
Cost of cyber attacks to businesses - (direct damage, plus disruptions)

MyDoom USD 38.5bn
The most expensive computer virus of all time

53% Board of Directors
of Swiss companies see cybersecurity as a technical issue

59% of employees
Steal proprietary corporate data when they quit or are fired

WIS@key

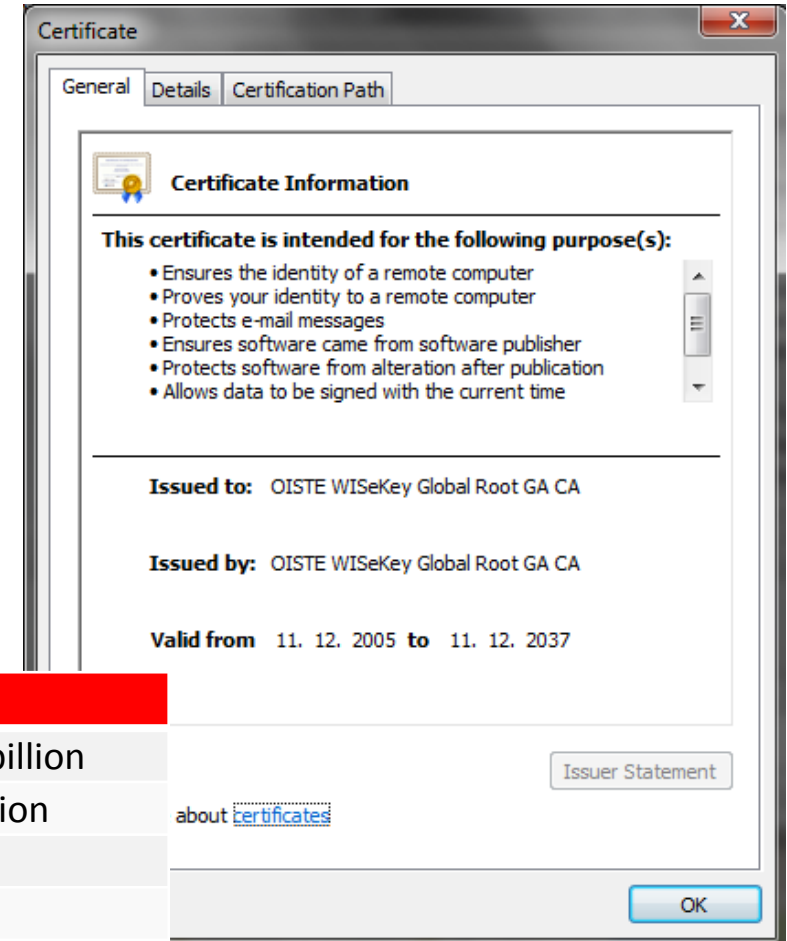# ROOT OF TRUST: UNIQUE TRUST MODEL

- The OISTE Foundation was created by the WISeKey Founders to ensure the neutrality of the Trust Services

- The Foundation is regulated by the Swiss laws and enforces values to protect the Neutrality and Sovereignty of the data and identities

- WISeKey is nominated as the operator of the Trust Model, but the by-laws of the Foundation allow the participation of other players, operating their own Root of Trust

- The OISTE Foundation is recognized by the United Nation with an special ECOSOC consultative status, and participates in different initiatives promoted by UN to universalize the access to the electronic identities

ESTABLISHED CYBER TECHNOLOGY

- **WISeKey is one of a limited number of companies with a Root Certificate product**

- **Provides unique PKI (Public Key Infrastructure) cryptography suitable for large-scale enterprises**

- **WISeKey's Root Certificate is embedded in 1.5+ billion web browsers worldwide [1]**

  - Allows an Internet user to trust visited sites with personal and confidential data, without any risk of leaks

Select Root Certificate Providers	Headquarters	Current status
Verisign	US	Acquired by **Symantec** in 2010 for $1.28 billion
CyberTrust	US	Acquired by **Verizon** in 2007 for $445 million
RSA	US	Acquired by **EMC** in 2006 for $2.1 billion
Entrust	Canada	Acquired by **Datacard** Group in 2013
EMC	US	Acquired by **Dell** in 2016 for 60 billion
WISeKey	Switzerland	

Certificate

General | Details | Certification Path

Certificate Information

This certificate is intended for the following purpose(s):

- Ensures the identity of a remote computer
- Proves your identity to a remote computer
- Protects e-mail messages
- Ensures software came from software publisher
- Protects software from alteration after publication
- Allows data to be signed with the current time

Issued to: OISTE WISeKey Global Root GA CA

Issued by: OISTE WISeKey Global Root GA CA

Valid from 11. 12. 2005 **to** 11. 12. 2037

Issuer Statement

about certificates

OK

(1)   Number of browsers since 1999 – for more info visit
http://www.itu.int/ITU-D/ecdc/pressarticles/oracle.html
http://www.itu.int/ITU-D/ecdc/about.html

GROWTH STRATEGY THROUGH ACQUISITIONS AND PARTNERSHIPS

WISEKEY COMPLETES THE ACQUISITION OF INSIDE SECURE SEMICONDUCTOR BUSINESS AND INTEGRATES VAULT IC TO ITS VERTICAL CYBERSECURITY PLATFORM

WISeKey has expanded its offerings and markets both by strategic alliances, organic growth and recently through acquisitions and intends to grow through complementary acquisitions and/or partnerships.

Acquisition of the semiconductor side from INSIDE Secure operational in September 2016 was the first transaction operated following such strategy.

WISeKey (SIX:WIHN) signs Letter of Intent to acquire QuoVadis consolidating Certification Authority power for eIDAS and IoT

Closing of the transaction envisaged for Q1 2017; projected to add over USD 20 million of profitable revenues in 2017

WISEKEY ECOSYSTEM

3.6 Billion
Browsers (total) Root of Trust Installed

400
New browser per year Root of Trust Installed

1 Million
Watches – WISekey Asymmetric keys

360 Million
IoT Chips – WISeKey VaultIC Chips

1.6 Billion
Mobile OS (total) Root of Trust Installed

200 Million
Mobile OS per year Root of Trust Installed

120 million
CertifyID and WISfans (Personal Identities)

1.2 Million
WISekey apps downloaded

120 Million
Digitally Signed emails per year

Empowering the Person to be at the Center of Gravity of the Internet

Root of Trust   Blockchain   Secure identity

Internet of Things   Artificial Intelligence

THE THREE TENANTS OF SECURITY ADDRESSED BY WISEKEY

CONFIDENTIALITY

prevents sensitive information from being obtained by the wrong user or device, while ensuring that it was received by the correct user or device.

Isolation of trusted or secure world vs "normal" world. Use of encryption/decryption algorithms

E.g. AES

INTEGRATITY

involves maintaining the consistency, accuracy, and trustworthiness of data during its entire life cycle to ensure it isn't altered by unauthorized people.

Based on HASH algorithms

AUTENTICATION

is a process that confirms the identity of a remote device or a device on the network to ensure that only authorized devices are connected to the network.

Based on signature and signature verification algorithms

E.g. ECDSA

WIS@key

BLOCKCHAIN ROUNDTABLE
DAVOS 2017

WIS@key

FIRST CHINESE PRESIDENT IN DAVOS

≡ **Forbes**

Xi Jinping Will Make History As First Chinese President To Attend Davos

Douglas Bulloch, CONTRIBUTOR

I write about the political economy of China and its major industries **FULL BIO** ∨

Opinions expressed by Forbes Contributors are their own.

China's President Xi Jinping. (Photo by Nicolas Asouri - Pool/Getty Images)

KEY GUESTS

ROUNDTABLE 2017

SPEAKERS 2017

Guest Speaker
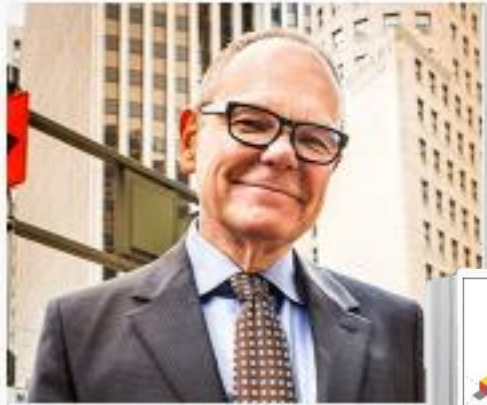
signing his book

Don Tapscott
C.M., BA, BSc, MEd, LLD CEO, The Tapscott Group Inc.

BLOCKCHAIN REVOLUTION
HOW THE TECHNOLOGY BEHIND BITCOIN IS CHANGING MONEY, BUSINESS, AND THE WORLD
DON TAPSCOTT and ALEX TAPSCOTT
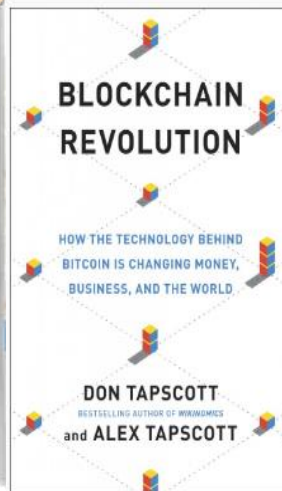
Carlos Creus Moreira
Founder, Chairman and CEO WISeKey
Read more

Taha Bawa
Co-founder, Goodwall
Read more

Adj.Prof. Dr. Martin Haemmig
The Globalization of Venture Capital & CVC
Read more

Richard Caetano
CEO, co-founder
Read more

Gérard Sanspeur
Chairman of the Board of Investment and the State Land Development Company Ltd
Read more

Primavera De Filippi
Researcher, CERSA / CNRS / Université Paris II (Panthéon-Assas)
Read more

WISEID BLOCKCHAIN

Blockchain platform integrating ID management, Federation and Bitcoin wallet
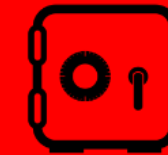
Protect your Peronal Data

Digital Assets
Proof of Identity on bitcoin wallet
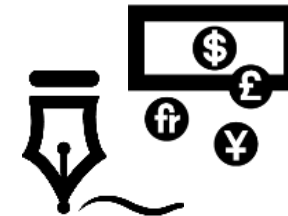
WIS@id

WISE**ID** BLOCKCHAIN

What is WISeID

- Proof of identity
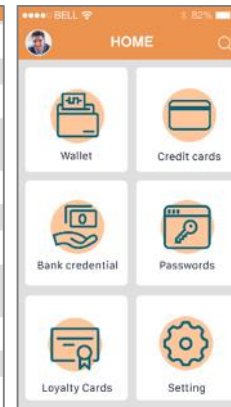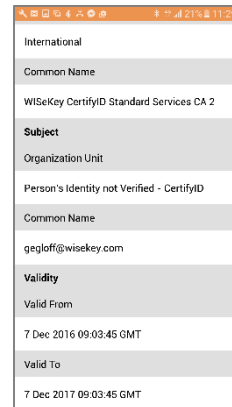 - Digital Certificate and Root of trust

- Secure personal information and digital assets
  - Encrypt every personal content

- Wallet
  - Signing Currency exchange and bitcoin transactions
  - Non-repudiation

- Secure Operations
  - Encryptiond and Digital signature

WISeID Blockchain

Secured by WIS@key
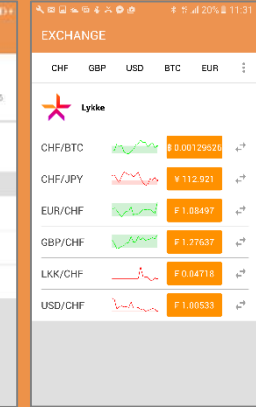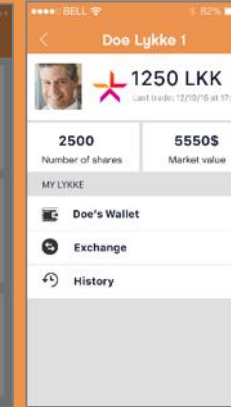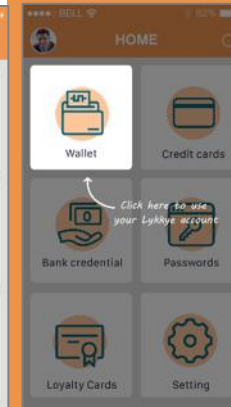
WISEID BLOCKCHAIN

Added identity layer on the blockchain
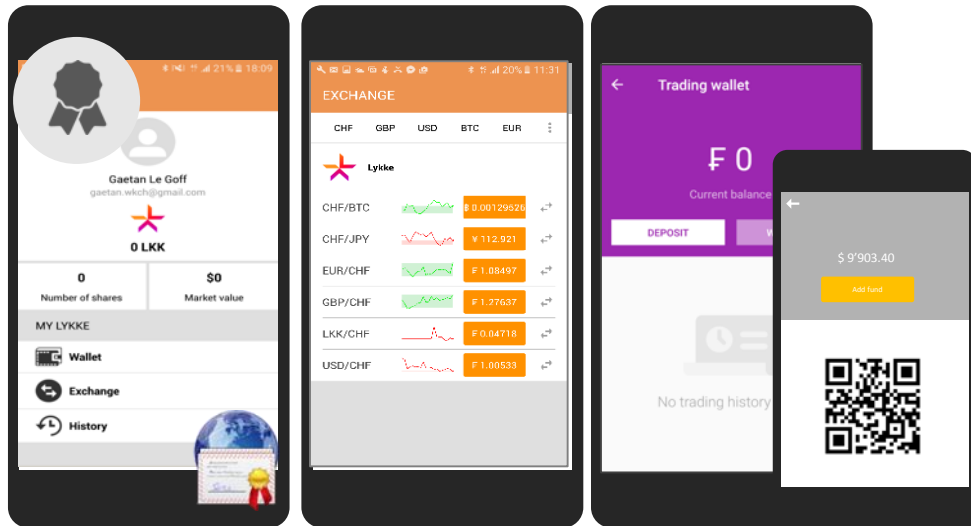
Proof of Identity
- Strong authentication
- KYC verification
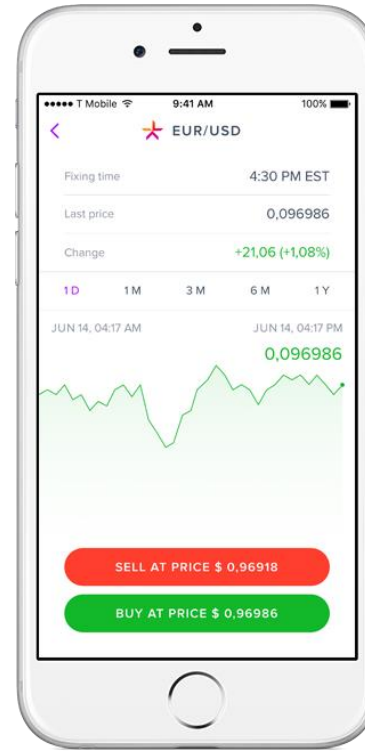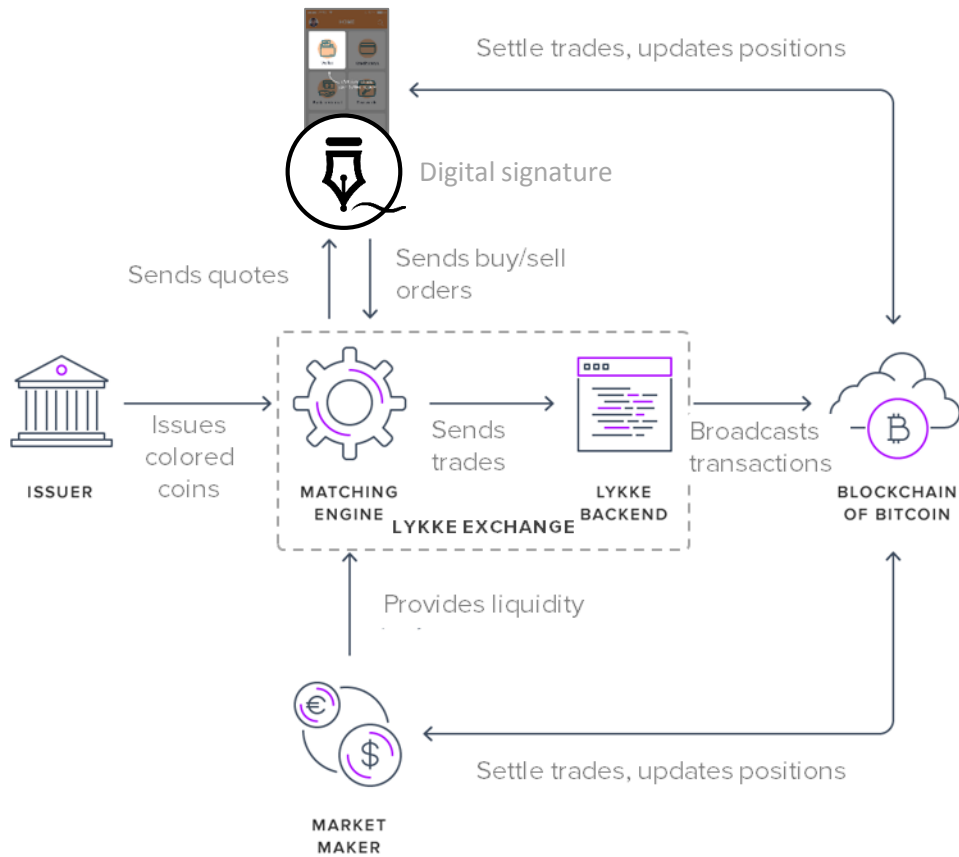- Personal Digitla Certificate

Proof of ownership
- Digital signature

Transaction (Currency transaction) → Digital signature of transaction → Complete transaction
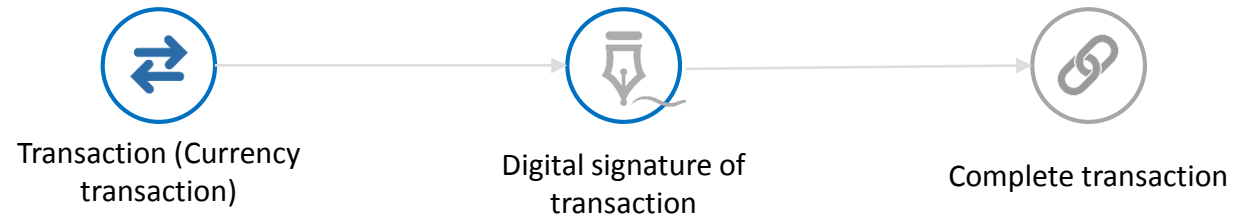
WISEID BLOCKCHAIN

Wallet High-level architecture

ONBOARD EASILY
Digital onboarding is fast and hassle-free

DEPOSIT SECURELY
Deposit digital assets to multi-signature wallets with an encrypted private key and refund insurance

TRADE FREELY
Buy and sell digital assets with 0% commission

SETTLE IMMEDIATELY
Receive the proof of your trade in 10 minutes

OWN DIRECTLY
Verify your asset ownership on the "trust machine" of blockchain

WITHDRAW TIMELY
Receive immediate withdrawal without any fee

WISEID BLOCKCHAIN

Trading of all asset classes

LykkeX is a semi-centralized Internet exchange to trade any asset class issued in the form of colored coins (thereby using Bitcoin Blockchain):

- Traded financial assets (FX, stocks, bonds, commodities, precious metals, CFDs, etc.)

- Less liquid financial assets (real estate, mortgages, credit, etc.)

- Non-financial assets (music rights, air miles, loyalty points, etc.)

- Currency coins covered by fiat money of the issuer

Unlike today's legacy trading environment, trades are cleared and settled instantaneously on LykkeX

DIGITAL SIGNATURE OF DOCUMENTS BLOCKCHAIN

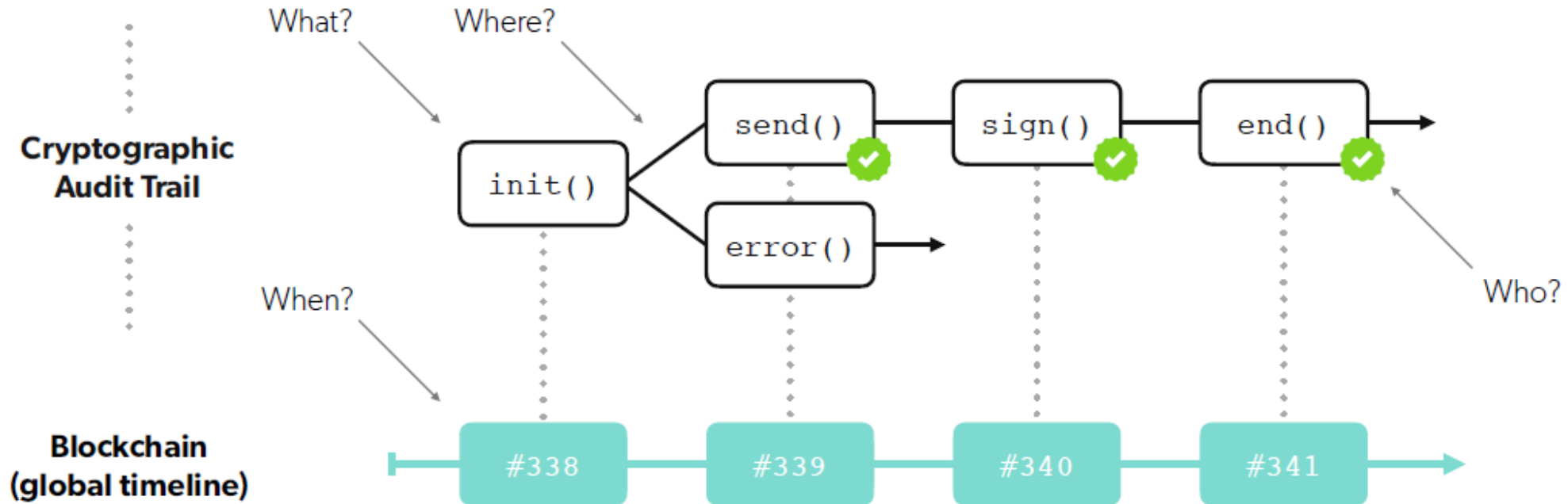# DIGITAL SIGNATURE OF DOCUMENTS ON BLOCKCHAIN

DIGITAL SIGNATURE – ARCHITECTURE

Proof of Process provides data integrity (what), proof of anteriority (when), non-repudiation (who) and contextual proof (where).

SPECIAL THANKS TO OUR PARTNERS

At a glance – our views

WISeKey Development in Blockchain

Thank you for your attention!
Find us